

Service Manual

Mini Cassette



Stereo Radio Cassette Player

RQ-SX50V



Colour

(S)Silver Type

Areas

P.....U.S.A.

PCCanada

EBGreat Britain

EGGermany and Italy, etc.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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AR10 Mechanism Series

Specifications

General:

Power Requirement:

Battery; DC 1.5 V one "R6/LR6, AA, UM-3" size battery (not included)

(Panasonic R6, LR6 or equivalent not included)

Rechargeable Battery; DC 1.2 V with an included

Panasonic Rechargeable Battery (RP-BP61SYS1)x1

Power Output:

4 mW+4 mW (RMS...max.)

Output Jack:

Headphones; 30 ohm

Dimensions: 109.6 (Wide) / 80.2 (High) / 21.9 (Depth) mm

Weight: 178 g (with rechargeable battery)

Charger: (RP-BC155AEY) (included)

Input; AC 120-240 V, 50 Hz, 4 VA

Output; DC 340 mA, 1.2 V

Playing time:

(When used in hold mode, at 25 °C on a flat and stable surface.)

The play time may be shorter depending on the operating conditions.

| Function Battery type | Tape | Radio |
|--------------------------|------|-------|
| Rechargeable (A) | 15 | 14 |
| Panasonic alkaline | 51 | 47 |
| Both together (A) | 65 | 60 |

Radio:

Frequency Range:

| AM mode | AM (kHz) | FM (MHz) |
|-------------|----------|--------------|
| 9 kHz mode | 522-1629 | 87.50-108.00 |
| 10 kHz mode | 520-1630 | 87.50-108.00 |

(0.1MHz steps)

TV; 1-12 ch (Japan mode only)

Intermediate Frequency: AM; 450 kHz, FM; 10.6 MHz

Sensitivity: AM; 316.2 μ V/m/0.5mW output (Max)

FM; 2.5 μ V/0.5 mW (-3 dB Limit sense)

Cassette Player:

Frequency Range (Normal/High/Metal): 40~18,000 Hz

Track System: 4-track 2-channel stereo playback

Note: Design and specifications are subject to change without notice.

Weight and dimensions are approximate.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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Accessories

Stereo earphones.....1pc.
(RFEV316P-KIS)



Remote controller.....1pc.
(RFEV012P-KS)



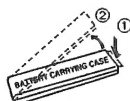
Charger.....1pc.
(RP-BC156APY)...(P)
(EP-BC156PCY)...(PC)
(RP-BC155AEY)...(EB, EG)



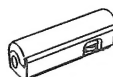
Rechargeable battery.....1pc.
(RP-BP61PYS1)...(P, PC)
(RP-BP62EYS1)...(EB, EG)



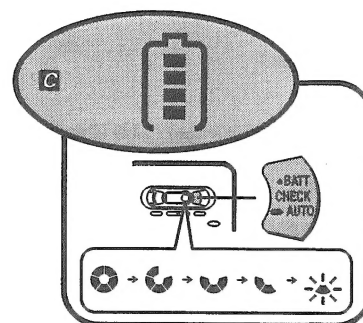
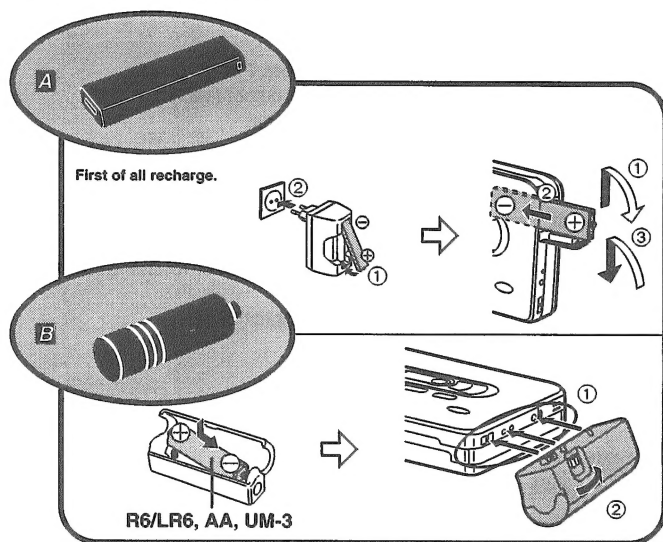
Rechargeable battery carrying case.....1pc.
(RFA0475-Q)



Dry cell battery case.....1pc.
(RFA0617-H)



Power Sources



A Rechargeable battery

- Use only the included charger when recharging.
- The chart shows expected use after 2 hours (11 hours at 120 V) of recharging at 25°C.

| | |
|-----------------|----------------|
| Tape playback | About 15 hours |
| Radio reception | About 14 hours |

- The rechargeable battery can be recharged about 300 times. When its operation time becomes extremely shortened, that's time for replacing it.

B Dry cell battery

C Battery condition indicators

- When the battery becomes weak The indicators will flash.
- Recharge the rechargeable battery or replace the dry cell battery with a new one.

- To confirm the indicators on the main unit in the stop mode Press **BATT CHECK**.

- To extend the playback time Install both types of battery (rechargeable and dry cell battery) in the unit.

Memory Presetting

(Available only from the main unit)
Frequencies of up to 20 radio stations (10 each for AM and FM) can be stored in the memory.

Preparation

•Release hold.

•Connect the earphones (the cord of the earphones acts as an FM antenna) when storing frequencies of FM stations in the memory.

Auto memory function

The frequencies of each band are automatically stored in ascending order in the memory.

1. Press RADIO/BAND to switch on the power.
2. Press MODE to display "MEMO".
3. Press and hold \square AUTO.

The confirmation beep sounds as each frequency is stored.

When "error" appears on the display: Correct presetting may not be possible in cases where the broadcast signals are too strong or too weak. In such cases, carry out presetting manually. (See below.)

Manual memory function

1. Press RADIO/BAND to switch on the power.
2. Press MODE to display "MEMO".
3. Press RADIO/BAND to select the band.
4. Press and hold MODE until the displayed frequency flashes.
5. Press + or - to select the broadcast frequency.
6. Press MODE so that "M" and the memory number flashes.
7. Press + or - to select the memory number to store the frequency.
8. Press MODE.

To erase an unnecessary station from the memory

1. Press RADIO/BAND to switch on the power.
2. Press MODE to display "MEMO".
3. Press RADIO/BAND to select the band.
4. Press + or - to select the memory number to be removed.
5. Press and hold MODE until the displayed frequency flashes.
6. Press and hold MODE until "M" and "----" flashes.
7. Press MODE.

Listening to the Radio

A

1. Connect the stereo earphones and the remote control.
2. Release hold.
3. Press RADIO/BAND (main unit) or press and hold the main button (remote control) to switch on the power.
4. Press MODE to display "MEMO" (MEMO mode) or not (free mode).
MEMO mode: To listen to a preset station
Free mode: To listen to a desired station (not preset)
5. Press RADIO/BAND (main unit) or the main button (remote control) to select the band.
Each press changes the indication between AM and FM.

6. Press + or - to select the desired station.

Memory number (only on the main unit in MEMO mode) and broadcast frequency changes.

7. Adjust the volume.

To turn off the radio:

Press \square OFF (main unit) or press and hold the main button (remote control).

To obtain better reception

When listening to AM broadcasts: \square B
As a built-in ferrite antenna is used, try various directions to obtain optimum reception.

When listening to FM broadcasts:

As the cord of the earphones acts as the FM antenna, extend it as far as possible rather than leaving it coiled.

To select stereo or monaural FM

When there is noise during FM reception: \square C
Press and hold SOUND SEL during reception to display "MONO".

The sound becomes monaural, but noise is reduced.

Automatic memory scan (for MEMO mode)

After selecting a band, press and hold + or - until the frequency display begins to change.

This function allows you to listen to each of the broadcast stations stored in the memory for about 5 seconds in order.

When a broadcast you like is being received:

Press + or - again.

To release the scan:

Press \square AUTO on the main unit.

Automatic tuning (for free mode)

When selecting a broadcast frequency, press and hold + or - until the frequency display begins to change. It will automatically stop when a station is located.

To stop automatic tuning:

Press + or - again.

To convert the AM frequency step

(Available only from the main unit)

At the time of purchase, the AM band frequency changes in 9 kHz steps. These steps can be converted from 9 to 10 kHz to receive radio stations in a different country or area which cannot be tuned in 9 kHz steps.

•Converting the frequency step erases the stations previously stored in the memory.

1. Press RADIO/BAND to switch on the power.
2. Press RADIO/BAND for more than 5 seconds to display the step.
3. Press + or - to select the step.

Each press changes the indication to "AM, 9" or "AM, 10".

"AM, 9": 9 kHz step.

For use in Southeast Asia or Europe.

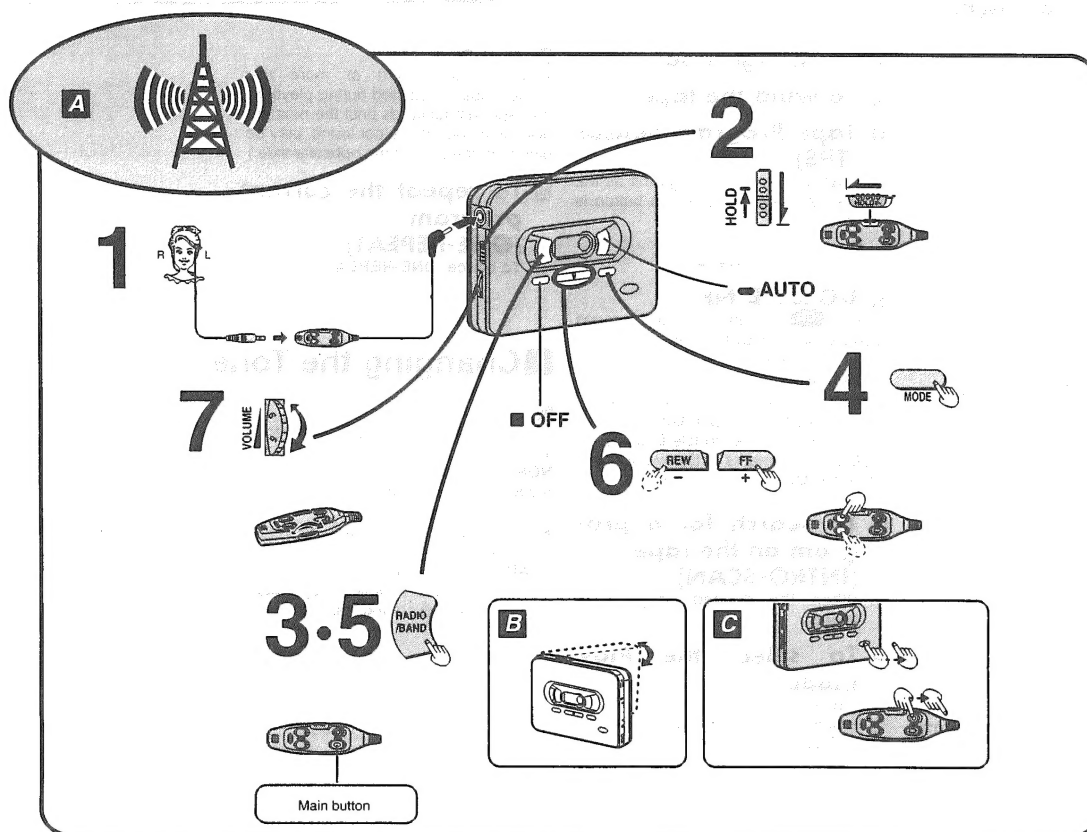
"AM, 10": 10 kHz step.

For use in North and South America or parts of Southeast Asia.

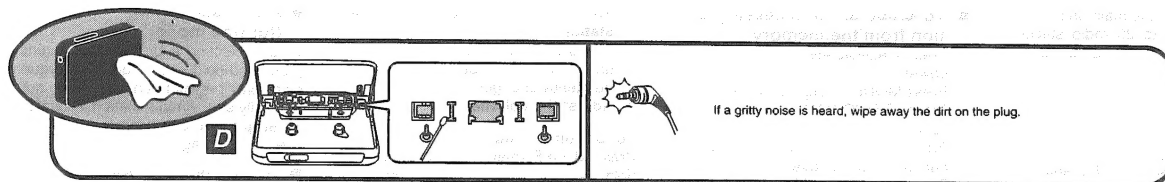
4. Press and hold MODE to confirm the AM broadcast frequency.

To return to the previous frequency step:

Follow the steps above.



Maintenance



Head care **D**

To ensure good sound quality, clean the head after approximately every 10 hours of use with a cotton swab dampened with a little alcohol.

Main unit

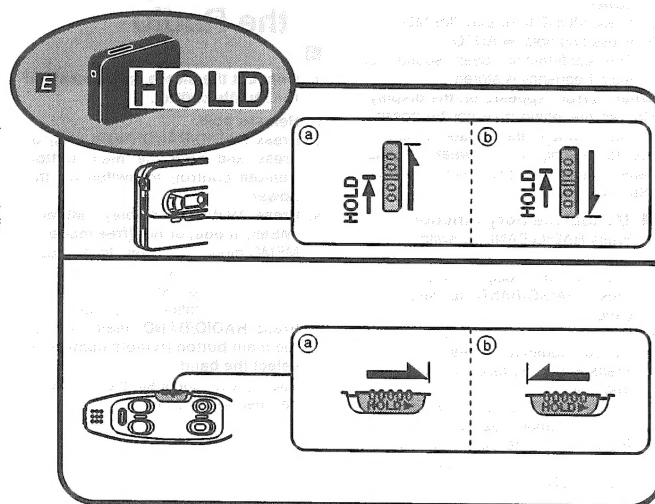
Clean the cabinet with a cloth, dampened in mild solution of soap and water. Do not use benzine or thinner or aerosol type cleaner.

Cautions

- Insert the batteries in the correct polarities to avoid leakage and damage to this unit.
- Remove all the batteries if the set will not be used for a long period of time.
- Do not peel off the plastic covering on the rechargeable battery.
- To avoid product damage, do not expose this product to rain, water or other liquids.
- Avoid using or placing this unit near sources of heat. Do not leave it in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.

Hold Function

- E** This function prevents the unit from operating in error.
- (a) To hold
 - (b) To release (Before operation)
- The function on the main unit and the remote control are independent of each other.



Playing a Tape

F This unit is equipped with an auto tape select function, so you can use normal, high or metal position tapes.

1. Insert the cassette tape.

Tapeslack is wound automatically when the cover is closed and playback will be ready to start from the forward side.

- (a) Forward side
- (b) Reverse side

2. Connect the stereo earphones and the remote control.

3. Release hold.

4. Press ◀ ▶ (main unit) or the main button (remote control).

5. Adjust the volume.

• Do not play your headphones or earphones at high volume.
(Before using the volume control on the remote control, be sure to adjust VOLUME on the main unit to the "5-7" position.)

To stop playback:

Press ■ OFF (main unit) or the main button (remote control).

■ Illuminated remote control

Pressing any button on the remote control or the unit lights the display for about 8 seconds (3 seconds when stopped); this enables easy use even in darkness.

(A) To confirm the display without operation

G To change sides

H To wind the tape

I Tape Program Sensor (TPS)

You can skip as many programs as the number of times (up to 9) the button is pressed.

(B) To switch to playback

J DOLBY B NR

Select "ON" to reduce noise on tapes recorded with Dolby B NR to 1/2.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

K To search for a program on the tape (INTRO-SCAN)

(C) When the desired program is found

L To select the Play mode

- BS: Blank skip function works.
- ↔: Both sides of the tape are played continuously.
- ↔: Both the forward and reverse sides are played through once.

M Blank-Skip:

When a silent part of more than 13 seconds is detected during playback, the tape fast forwards until the next program is found. (If it is not found, play begins from the start of the opposite side.)

N To repeat the current program (ONE-REPEAT)

(D) To cancel ONE-REPEAT

Changing the Tone

O

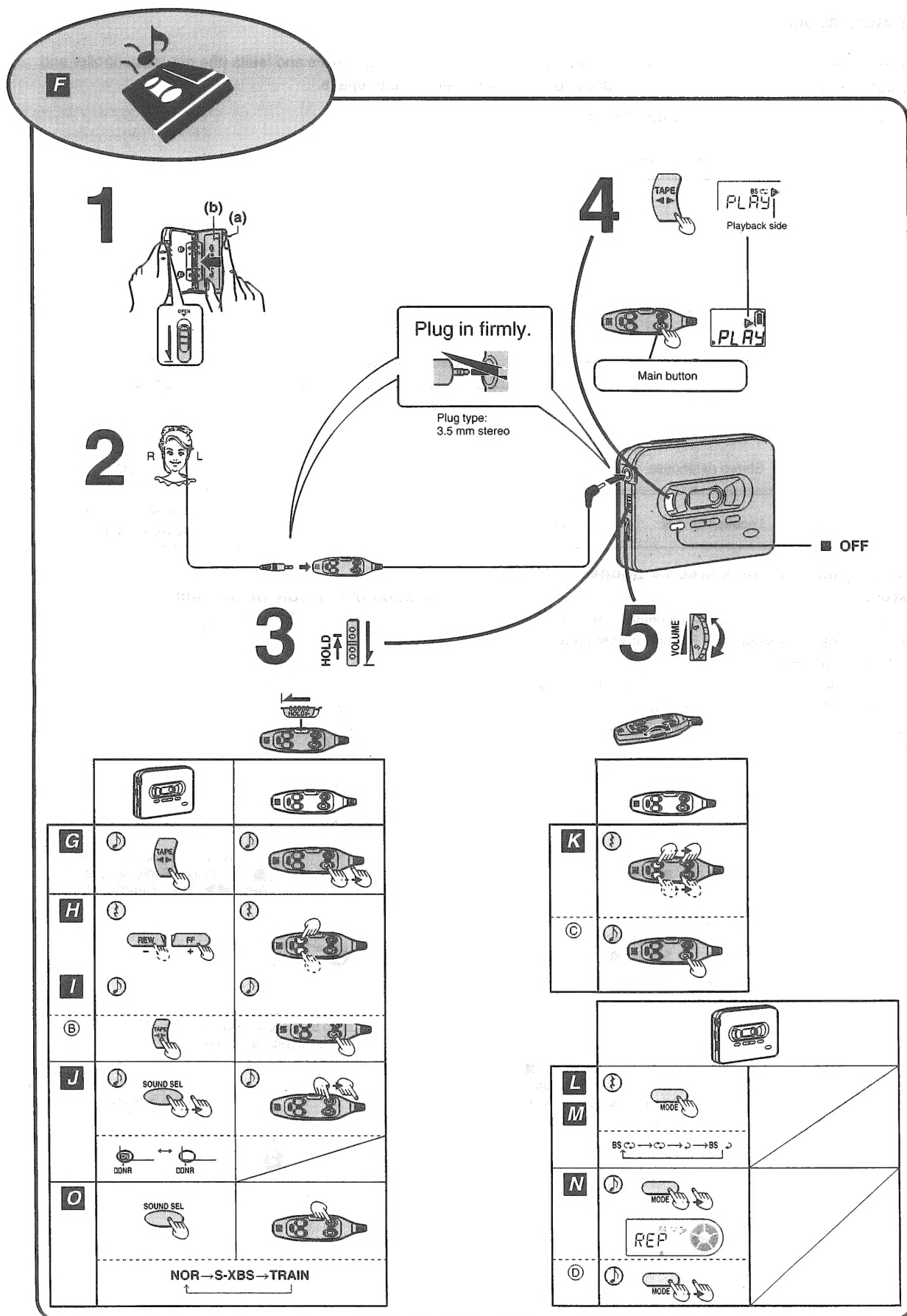
Works when playing a tape or listening to the radio.

NOR: Normal sound.

S-XBS: Boosts the low frequency range.

• If distortion occurs, turn down the volume.

TRAIN: Cuts down the audible level of sound which may disturb those around you.



Service Mode

This unit and its remote controller have a service mode which can be used to locate errors and faults (the remote controller and stereo earphones are detachable. Refer to this document to provide service and repairs.

Quick reference for service mode errors

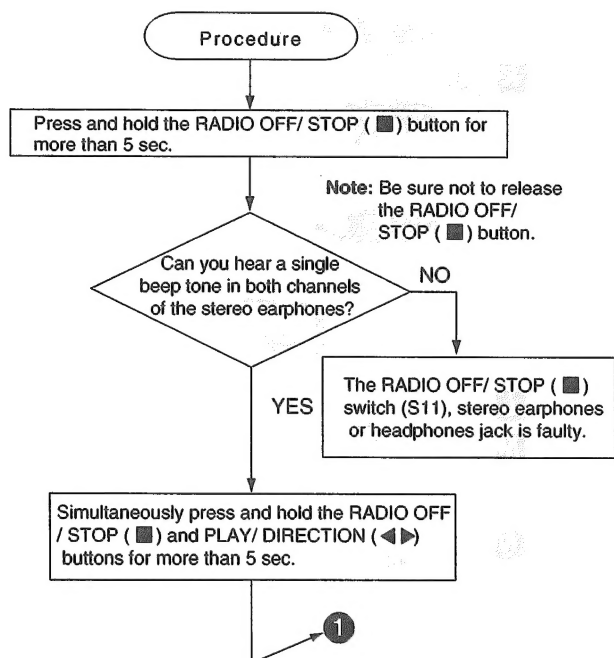
The following table shows error identification criteria:

| Service mode | | Component | Judgment criteria | | | |
|--------------|---|-------------------|-------------------|------------------|-------------------|--|
| (1) | Unit and stereo earphones test | Unit | OK | OK | NG | NG |
| | | Stereo earphones | OK | NG | OK | NG |
| | | Location of fault | No faults | Stereo earphones | Unit | Unit and stereo earphones |
| (2) | Remote controller and stereo earphones test | Remote controller | OK | OK | NG | NG |
| | | Stereo earphones | OK | NG | OK | NG |
| | | Location of fault | No faults | Stereo earphones | Remote controller | Remote controller and stereo earphones |

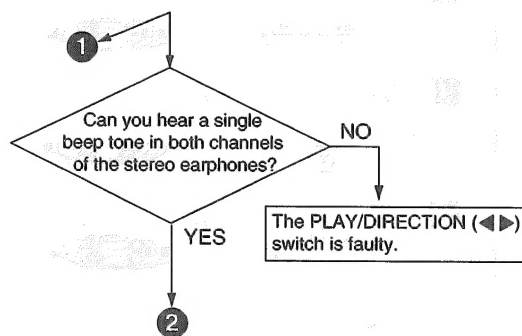
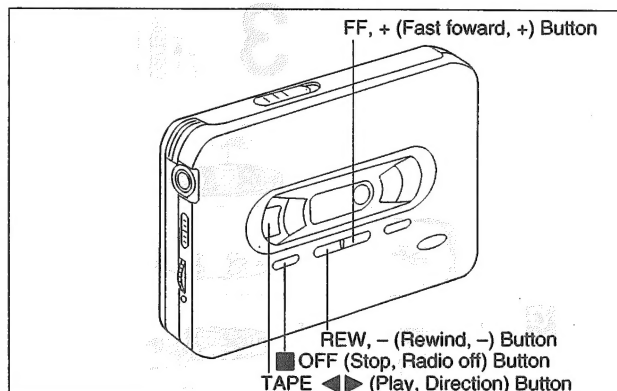
(1) Checking the unit and stereo earphones

Preparations:

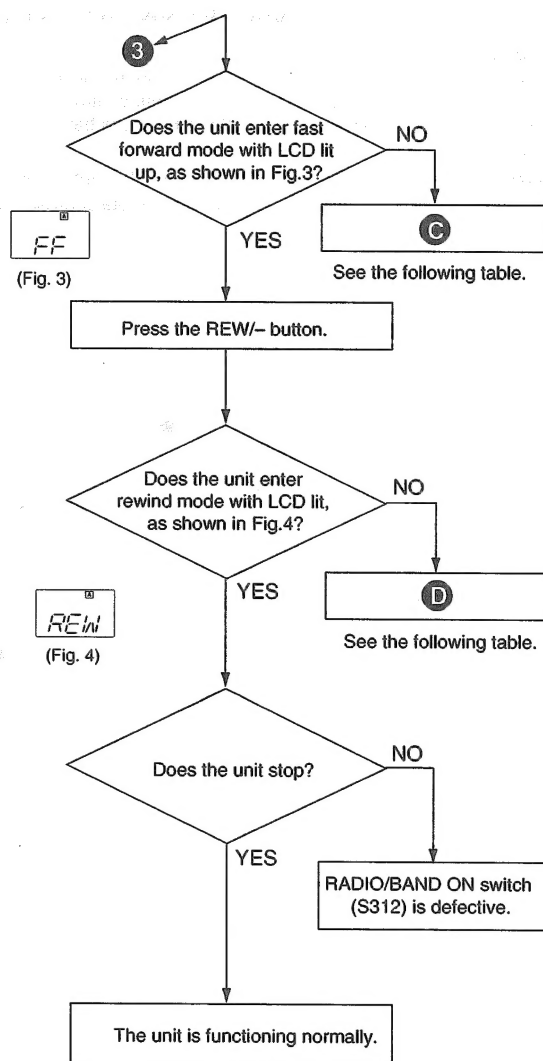
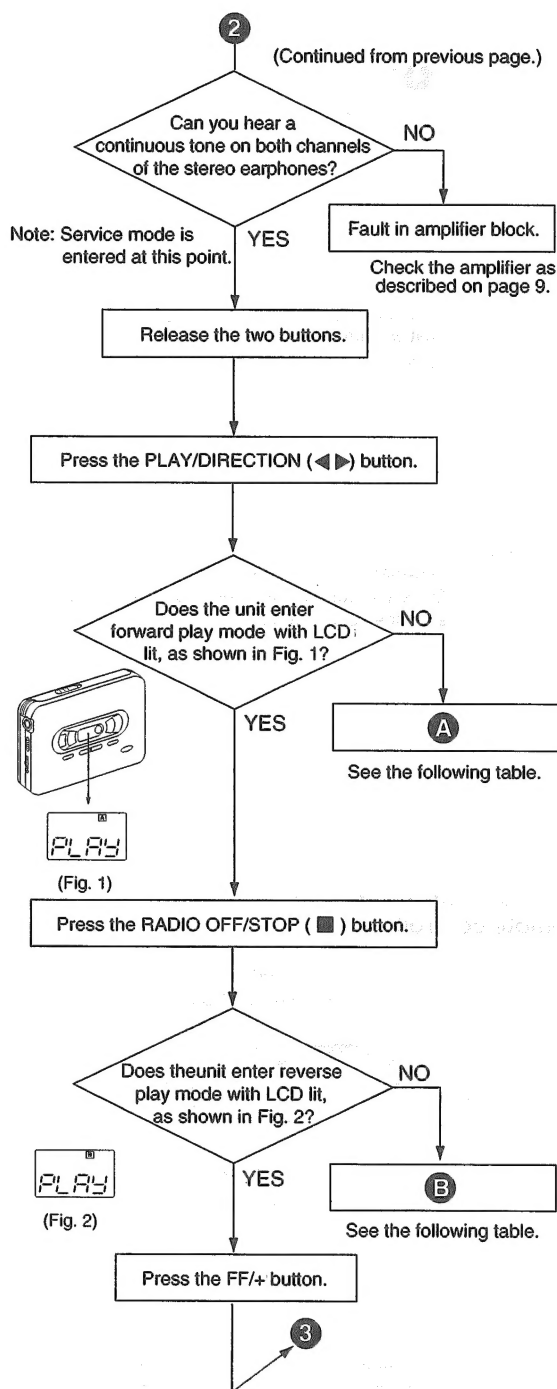
1. Firmly plug the stereo earphones into the headphones jack.
2. Install fully-charged rechargeable or R6/ LR6 dry cell batteries into the battery compartment.
3. Load a music tape into the unit and close the cassette compartment lid.
4. Make sure the HOLD button on the unit is off.
5. Press the MODE switch, and set the Blank Skip/Reverse Mode to "OFF/ ↺".



• Location of controls on the unit



(Continued on the next page.)



Note: Once the RADIO/BAND ON button is pressed and the unit stops, it exits the service mode.

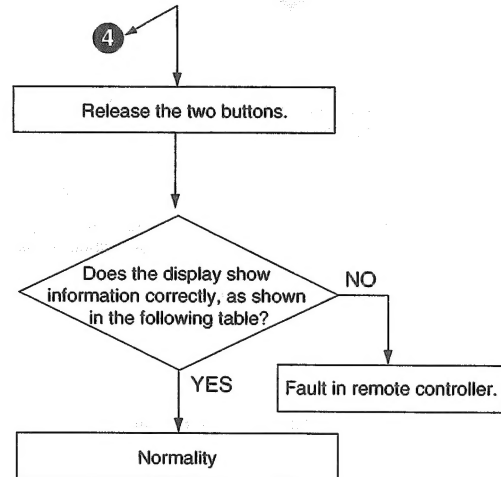
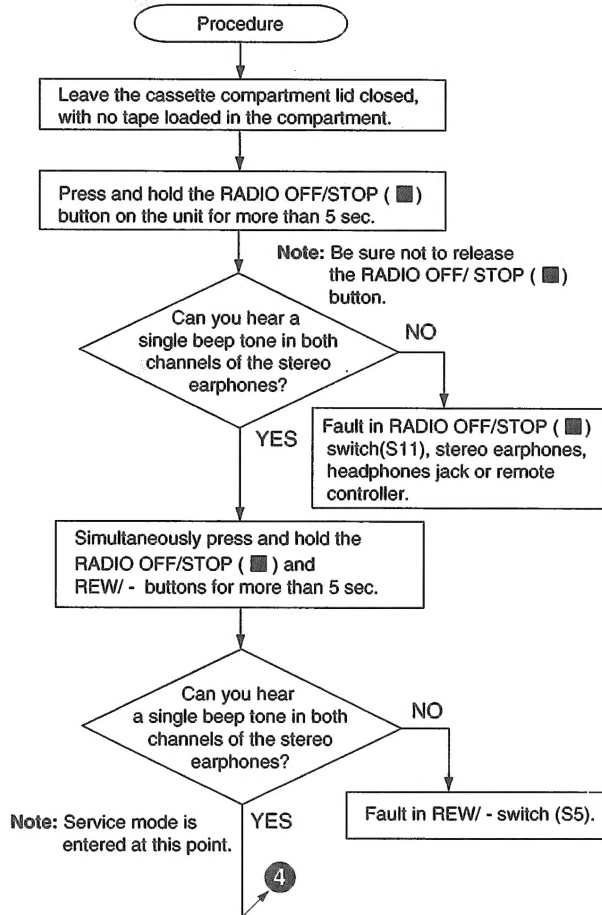
• Troubleshooting

| Location of fault | Symptom | Faulty component |
|-------------------|---|--|
| A | The unit fails to enter play mode or change the direction of play when the PLAY/DIRECTION (◀▶) button is pressed. | Fault in S7 (PLAY/ DIRECTION), S11 (RADIO OFF/ STOP) or motor. |
| B | | |
| C | The unit fails to enter fast forward mode when the FF/+ button is pressed. | Fault in S8 (FF/+). |
| D | The unit fails to enter rewind mode when the REW/- button is pressed. | Fault in S5 (REW/ -). |

(2) Checking the remote controller and stereo earphones

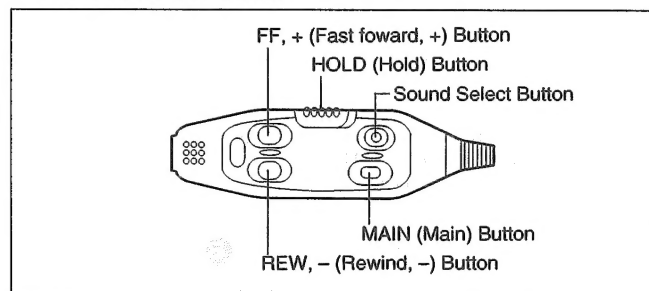
Preparations:

1. Firmly plug the remote controller into the headphones jack.
2. Firmly plug the stereo earphones into the remote controller.
3. Install fully-charged rechargeable or R6/ LR6 dry cell batteries into the battery compartment.
4. Leave the cassette compartment lid closed, with no tape loaded in the compartment.
5. Make sure the HOLD buttons on the unit and remote controller are off.



Note: The remote controller will continue to display the information last called up in service mode. Once the batteries are removed from the unit, it exits the service mode.

• Location of controls and connections on the remote controller



• Procedure for testing the remote controller

| Remote controller operation | Enters service mode. → Press main button. → Press FF button. → Press REW button. → Press One-repeat/EQ button. | | | | |
|-----------------------------|--|---|--|--|---|
| Normal information display | "PLAY" is displayed on the display panel. | "FF" is displayed on the display panel. | "REW" is displayed on the display panel. | "522" is displayed on the display panel. | After a single tone in the both channels of the stereo earphones hear, the display panel glows blue and "OFF" is displayed for about 5 sec. |

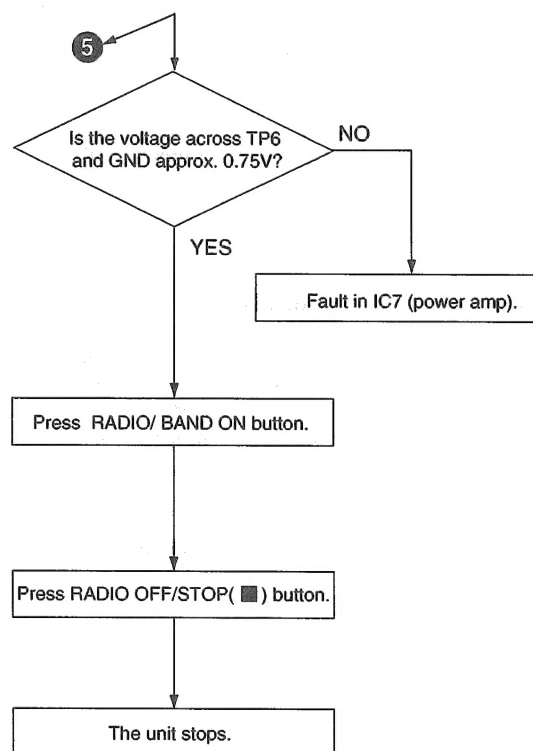
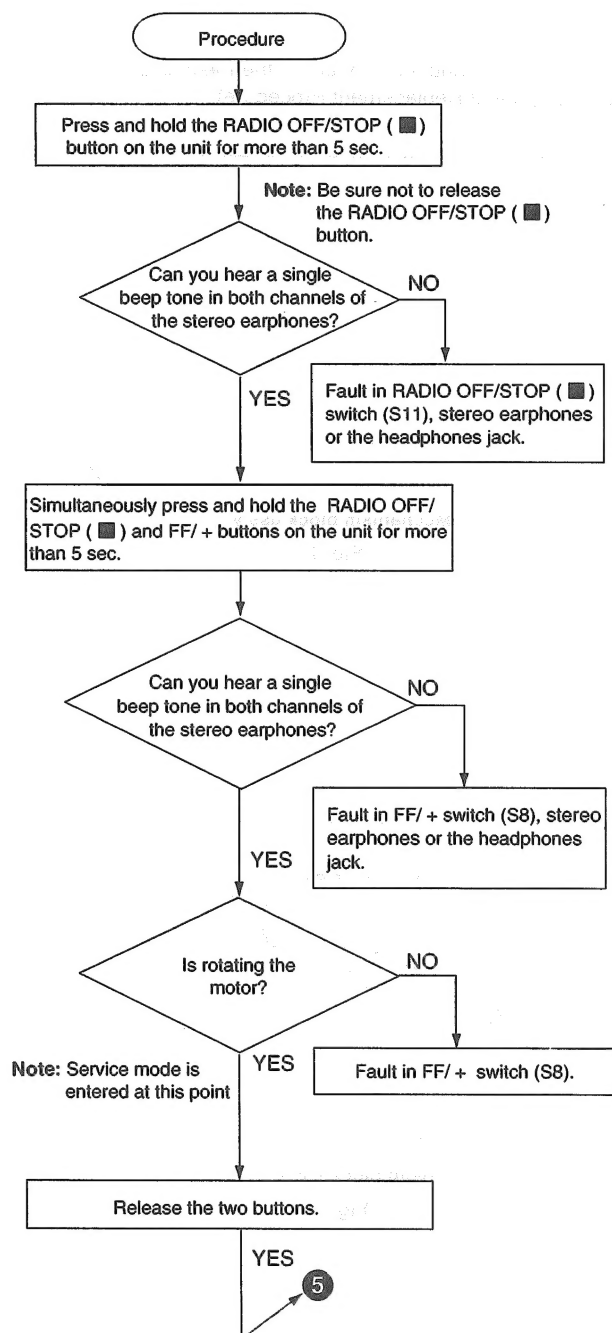
• The remote controller is functioning normally if it displays information as shown in the table above.

(3) Checking the amplifier block

The following procedure is only necessary if a fault in the amplifier block was detected during testing of the unit or stereo earphones.

Preparations:

1. Make sure the HOLD button on the unit is off.
2. Follow the steps described in Step 12 of checking for the main P.C.B. on page 11.
3. Firmly plug the stereo earphones into the headphones jack.



- Notes:
- The motor is rotating when do not the RADIO/BAND ON button but the RADIO OFF/STOP (■) button.
 - Push the RADIO/BAND ON button after the motor stopped.
 - In service mode, the unit stays in fast forward mode until the RADIO OFF/STOP (■) button is pressed, at which time the unit exits service mode.

■ Mechanism Block Replacement Procedure

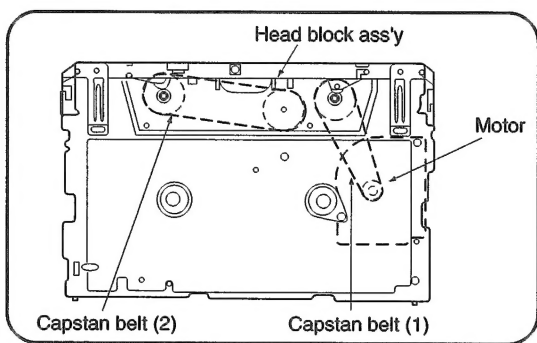
• Mechanism block replacement

Repair parts are supplied in the form of a mechanism block ass'y, from which the head block, motor, and capstan belts (1) and (2) are removed.

Before replacing the mechanism block, perform the following steps :

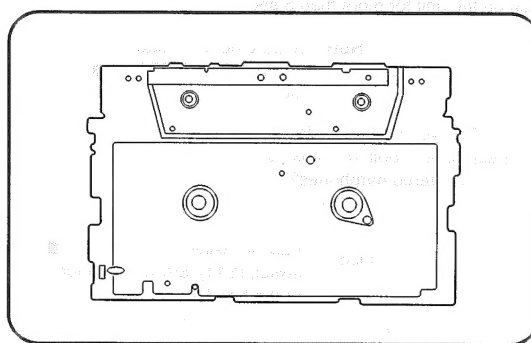
Preparations

Remove the head block, motor, and capstan belts (1) and (2) from the unit, and install them in the mechanism block ass'y (for disassembly, refer to Operation Checks and Main Component Replacement Procedure).



Mechanism block

Fig. 1



Mechanism block ass'y

Fig. 2

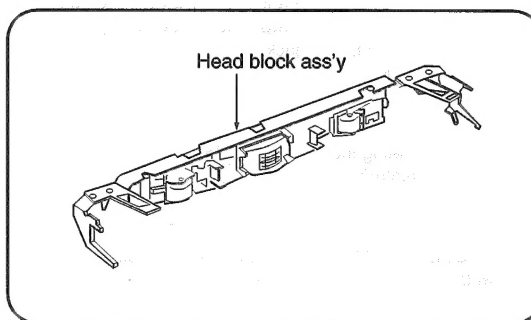
※ No adjustment is needed after replacement.

• Head block replacement

Repair parts are supplied in the form of a complete head block ass'y, which includes the head, head arm spring, and pinch roller arms (F) and (R) .

The head arm spring and pinch roller arms can also be supplied separately on request.

※ No head azimuth adjustment is needed.



Head block ass'y

Fig. 3

■ Operation Checks and Component Replacement Procedures

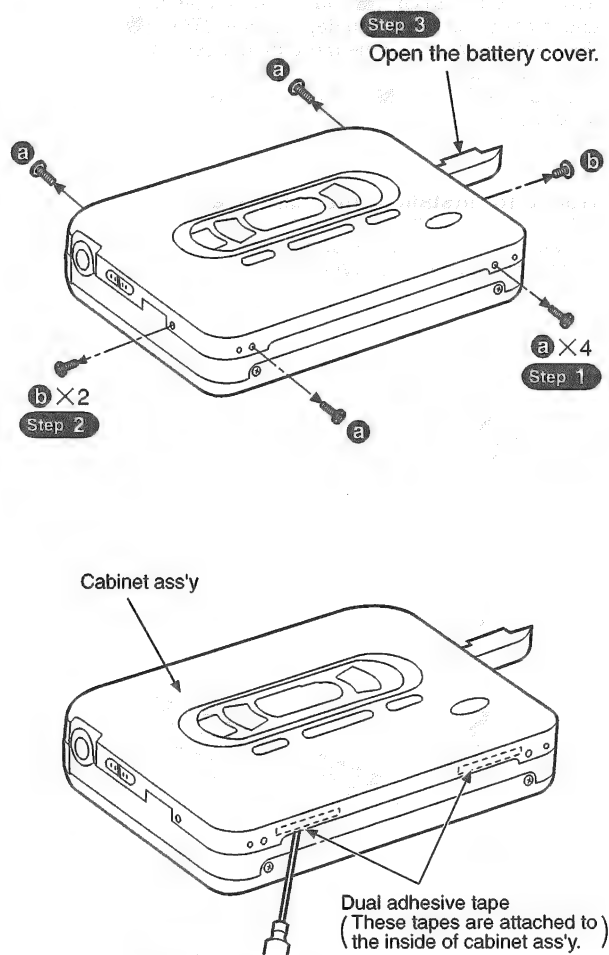
- NOTE**
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
 2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
 3. [] indicates parts No.

● Contents

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| 1. Checking for the main P.C.B. | 11,12. |
| 2. Replacement for the motor and capstan belt. | 13. |
| 3. Replacement for the intermediate ornament (A). | 14. |
| 4. Replacement for the head block ass'y. | 14,15. |

1. Checking for the main P.C.B.

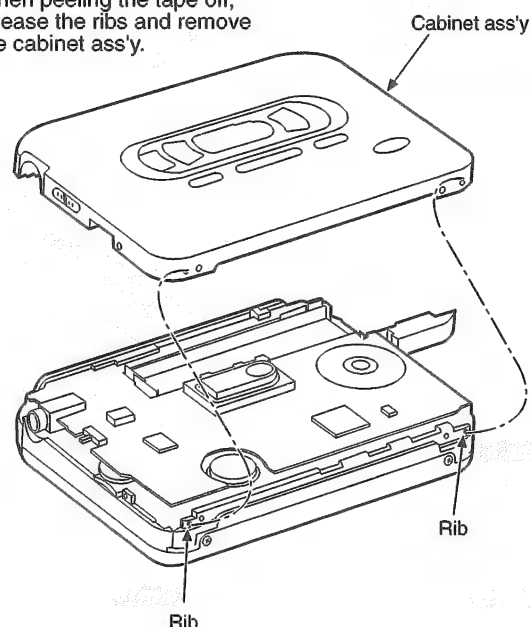
〈Checking for the main P.C.B. (A side)〉



Step 4
Insert the thin tip of minus screwdriver into the clearance between the cabinet ass'y and intermediate cabinet ass'y, and then peel the tape off.

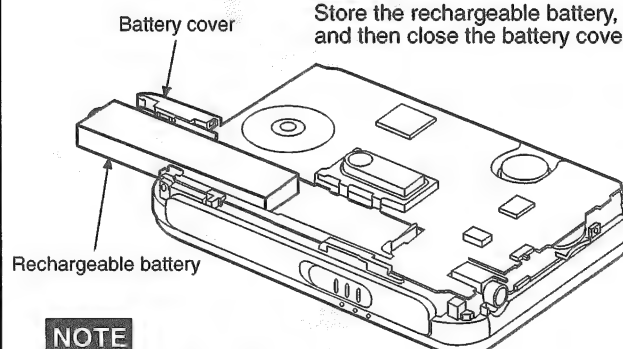
Step 5

When peeling the tape off, release the ribs and remove the cabinet ass'y.



Step 6

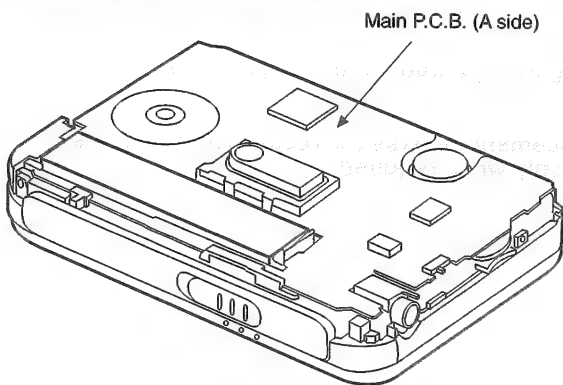
Store the rechargeable battery, and then close the battery cover.



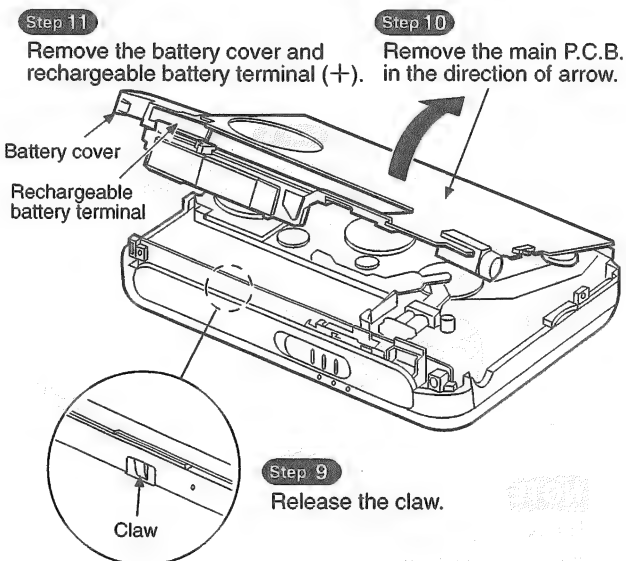
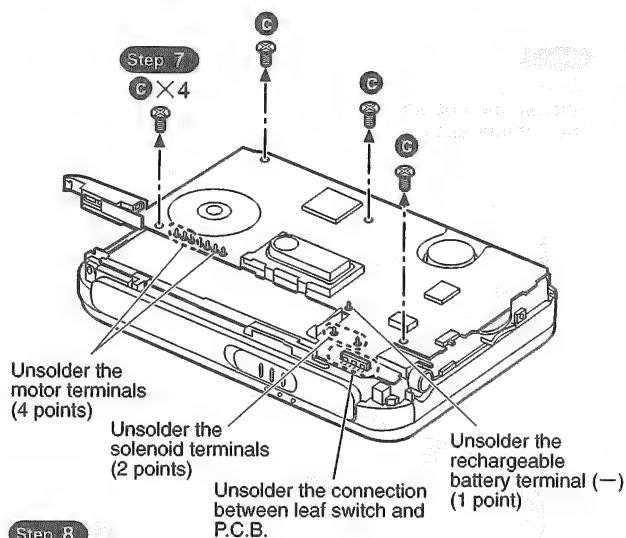
NOTE

The rechargeable battery should be recharged fully.

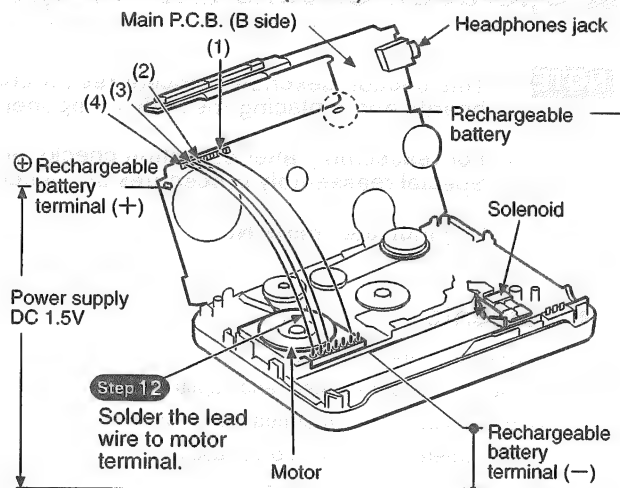
- Check the main P.C.B. (A side) as shown below.



〈Removal for checking the main P.C.B. (B side)〉



- Check the main P.C.B. (B side) as shown below.

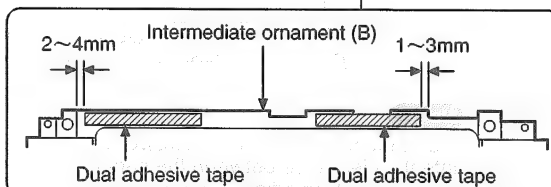
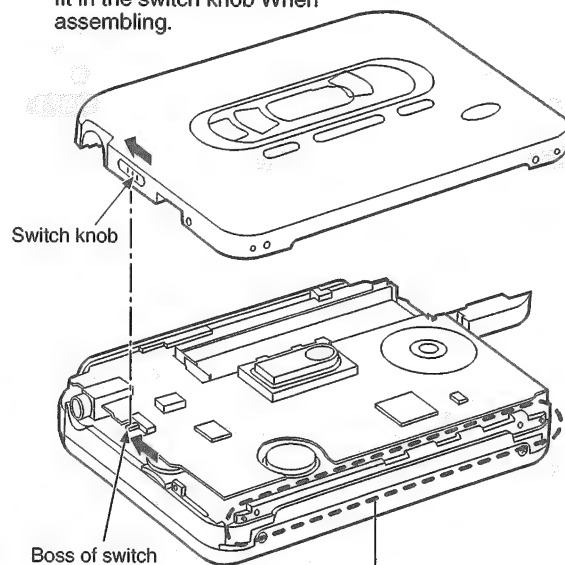


Operation Checks

Confirm that the beeper sounds once by headphones when depressing the STOP (■) button more than 5 sec. under above condition, and then depress the STOP (■) and FWD (FF) buttons at same time more than 5 sec., so the FF mode will be operated. Depress the STOP (■) button, and then that operation will be stopped.

Notice for installing the cabinet ass'y

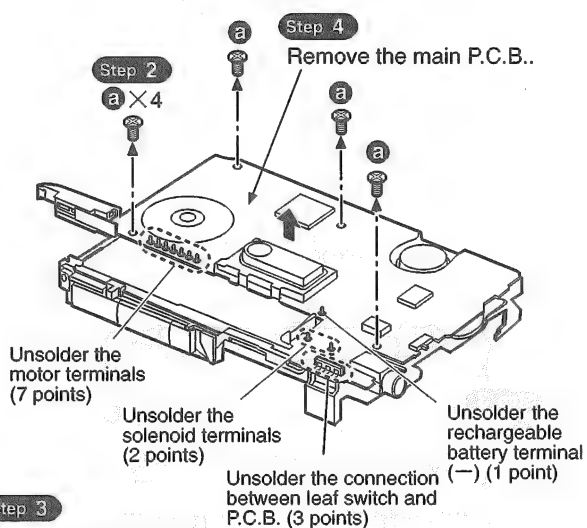
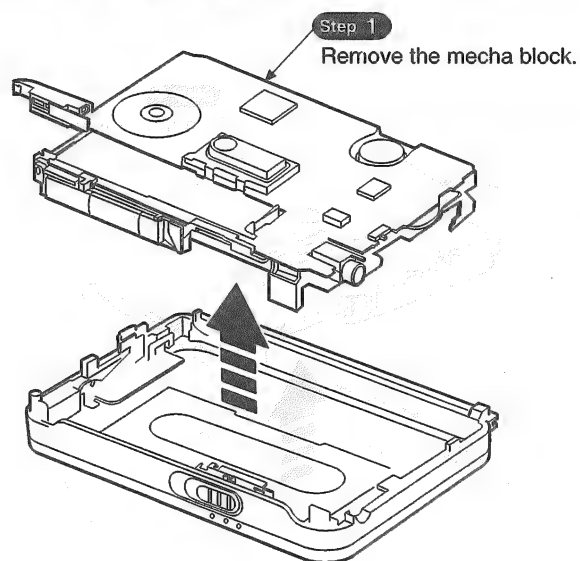
1. Make sure the boss of switch are fit in the switch knob When assembling.



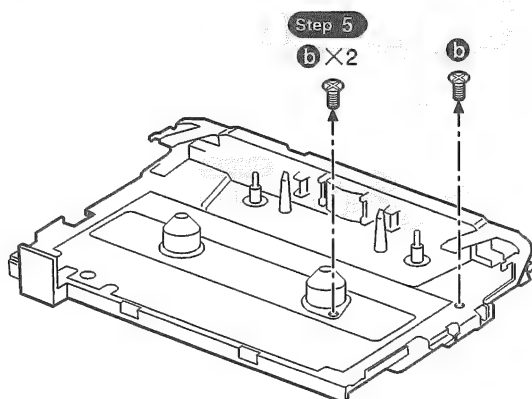
2. Apply the new dual adhesive tape to the intermediate ornament (B). (Peel the old tapes off completely.)

2. Replacement for the motor and capstan belt

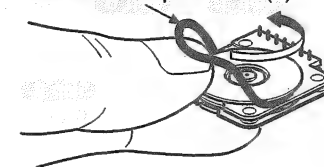
Follow the Step 1 ~ Step 6 of the item 1 on page 11.



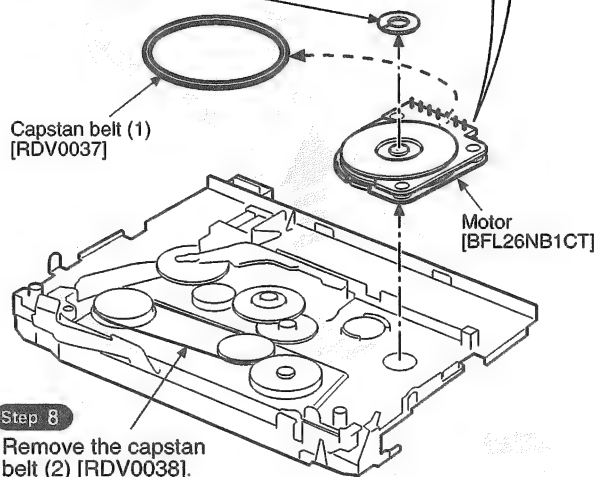
Step 3
Unsolder each point.



Step 7
Remove the capstan belt (1).

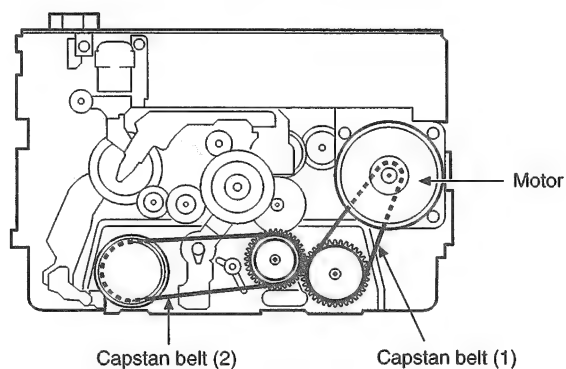
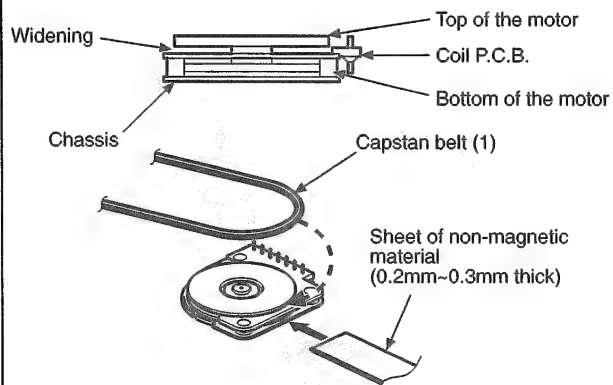


Step 6
Remove the washer.



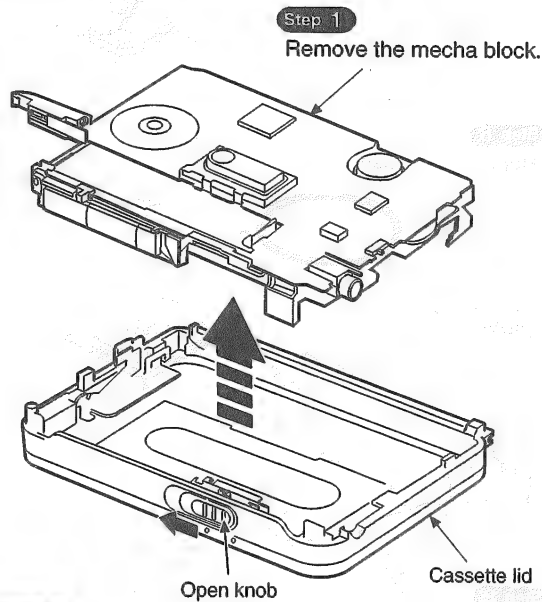
Installing the capstan belt (1)

When install the capstan belt (1) to motor, push up the motor by insert the non-magnetic material sheet between bottom of the motor and the chassis, and install the capstan belt (1) between top of the motor and the coil P.C.B..



3. Replacement for the intermediate ornament (A)

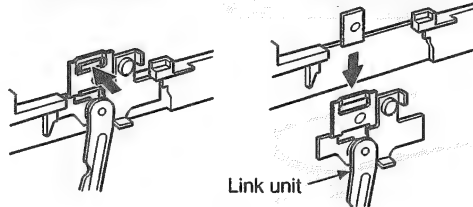
Follow the Step 1 ~ Step 6 of the item 1 on page 11.



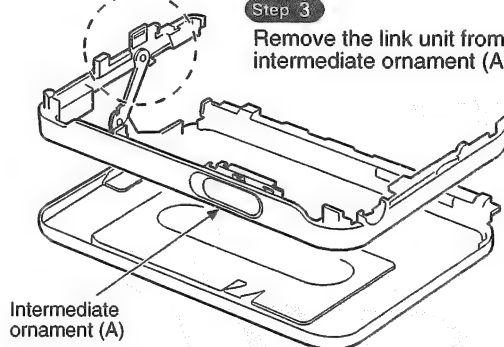
Step 2
Push the open knob, and then open the cassette lid.

1. Push the hook.

2. Pull out the link unit.

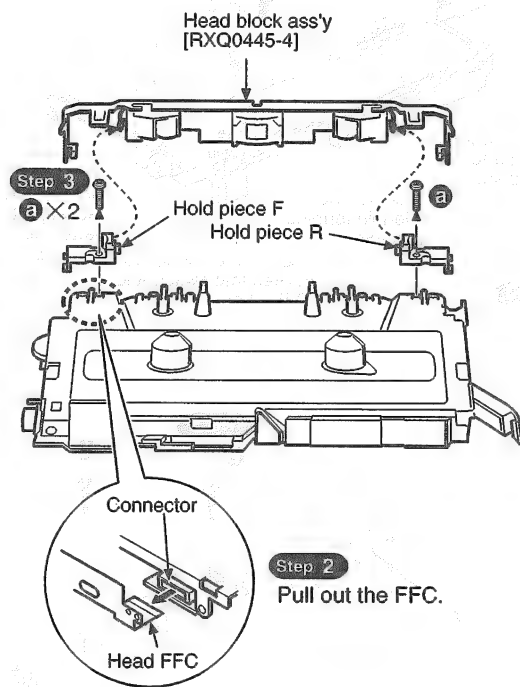
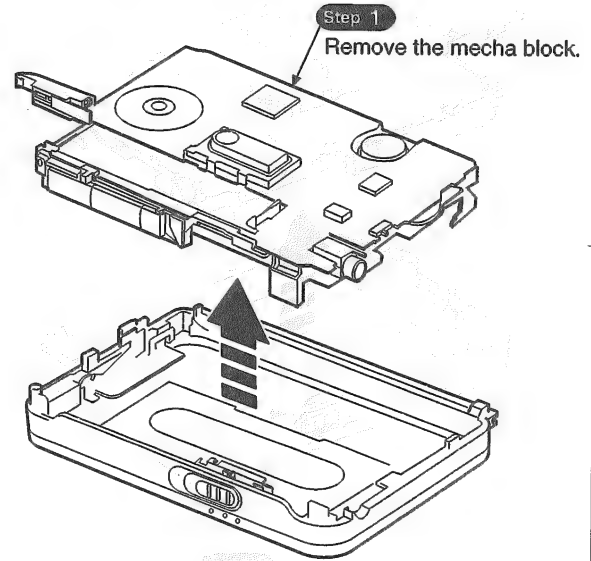


Step 3
Remove the link unit from intermediate ornament (A).



4. Replacement for the head block ass'y

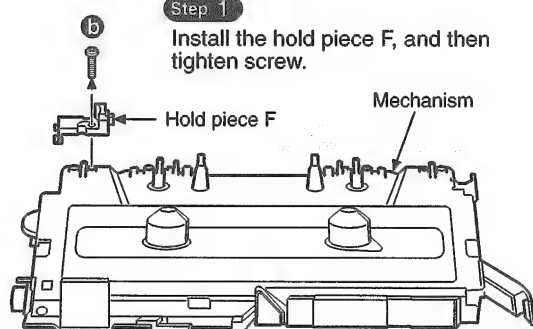
Follow the Step 1 ~ Step 6 of the item 1 on page 11.



Assembly procedures for head block ass'y after replacement

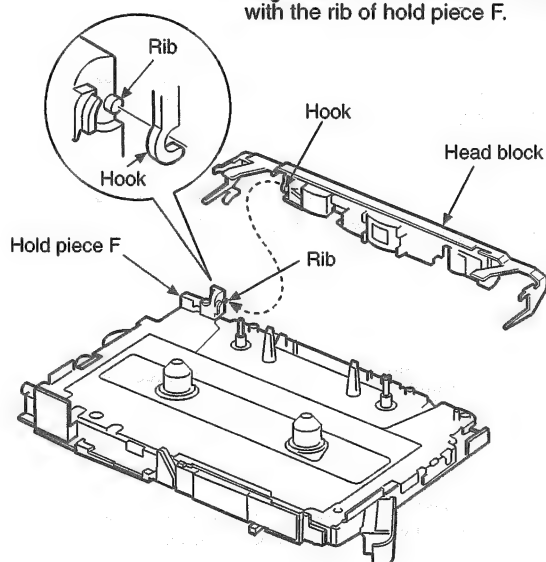
Step 1

Install the hold piece F, and then tighten screw.



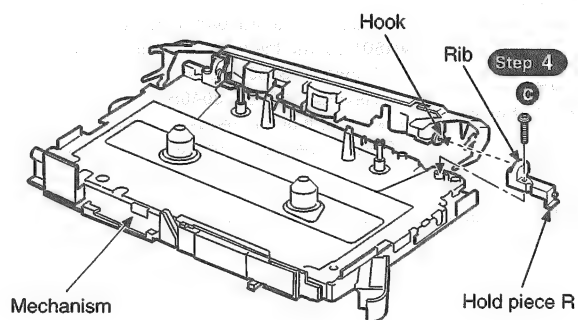
Step 2

Align the hook of head block ass'y with the rib of hold piece F.



Step 3

Align the hook of head block ass'y with the rib of hold piece R, and then install the hold piece R to the mechanism.



Step 4

Install the hold piece R, and then tighten screw.

Label 'c' points to the screw used to tighten the hold piece R.

Mesurements and Adjustments

• Preparation for Adjustment

Follow "step 1~ step 12" in item on pages 11, 12.

• Measurement Condition

- | | |
|---|---|
| 1. Set volume control to maximum. | 4. Release the hold state. |
| 2. Set Dolby NR switch to OFF. | 5. Set power source voltage to 1.5V DC. |
| 3. Set RADIO/BAND switch to ON (FM stereo, AM/FM adjustment). | |

• Measuring Instruments and Special Tools

- | | |
|------------------------------|----------------------|
| 1. Signal generator (AM, FM) | 3. Frequency counter |
| 2. Oscilloscope | |

• Radio Section

• AM / FM Adjustment

| Band | Signal Generator | | Display Setting | Indicator (Oscilloscope) | Adjustment Point | Remarks |
|------|--|-----------|-----------------|--|----------------------------|----------------------------------|
| | Connection | Frequency | | | | |
| AM | Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver. | 594kHz | 594kHz | Headphones jack (32Ω) (Refer to Fig. 2) | L202 (Refer to Fig. 3) | Adjust L202 for maximum output. |
| FM | TP131 or TP231 ... (+) TP132 or TP232 ... (-) (Refer to Fig. 1) | 90MHz | 90MHz | Headphones jack (32Ω) (Refer to Fig. 2) | CT101 (Refer to Fig. 3) | Adjust CT101 for maximum output. |

• FM Stereo Adjustment

| Item | Input | Output | Adjustment Point | Procedure |
|----------------------|--|--|--------------------------|---|
| FM Stereo adjustment | 76MHz, 66dB TP131 or TP231 ... (+) TP132 or TP232 ... (-) (Refer to Fig. 1) | TP118 or TP218 ... (+) TP132 or TP232 ... (-) (Connect a 220kΩ~330kΩ resistor between the test points TP118 or TP218 and TP132 or TP232 (Refer to Fig. 1) | VR3 (Refer to Fig. 2) | Adjust VR3 for 19 kHz ± 50 Hz reading on frequency counter. |

• Tape Section

| Item | Test Tape | Measurement Point | Adjustment Point | Procedure |
|-----------------------|--------------------------|---|----------------------------|--|
| Tape speed adjustment | QZZCWAT (3kHz, -10dB) | Connect the frequency counter to Headphones jack (32Ω) (Refer to Fig. 1) | VR601 (Refer to Fig. 3) | Playback the central part of the tape and adjust VR601 so that the tape speed is as follows. Forward: 3005±15Hz Reverse: 2970~3040Hz Make sure that the frequency range is within ±60Hz for between "Forward" and "Reverse" mode. |

Note: The playback head is supplied on the head arm assembly. (See the "Mechanism Parts Location" on page 30.)
The assembly requires no adjustment.

● Adjustment Point

Note: This printed board diagram shows a view the layer 4 side of pattern drawing (A) as shown in Fig. 1.

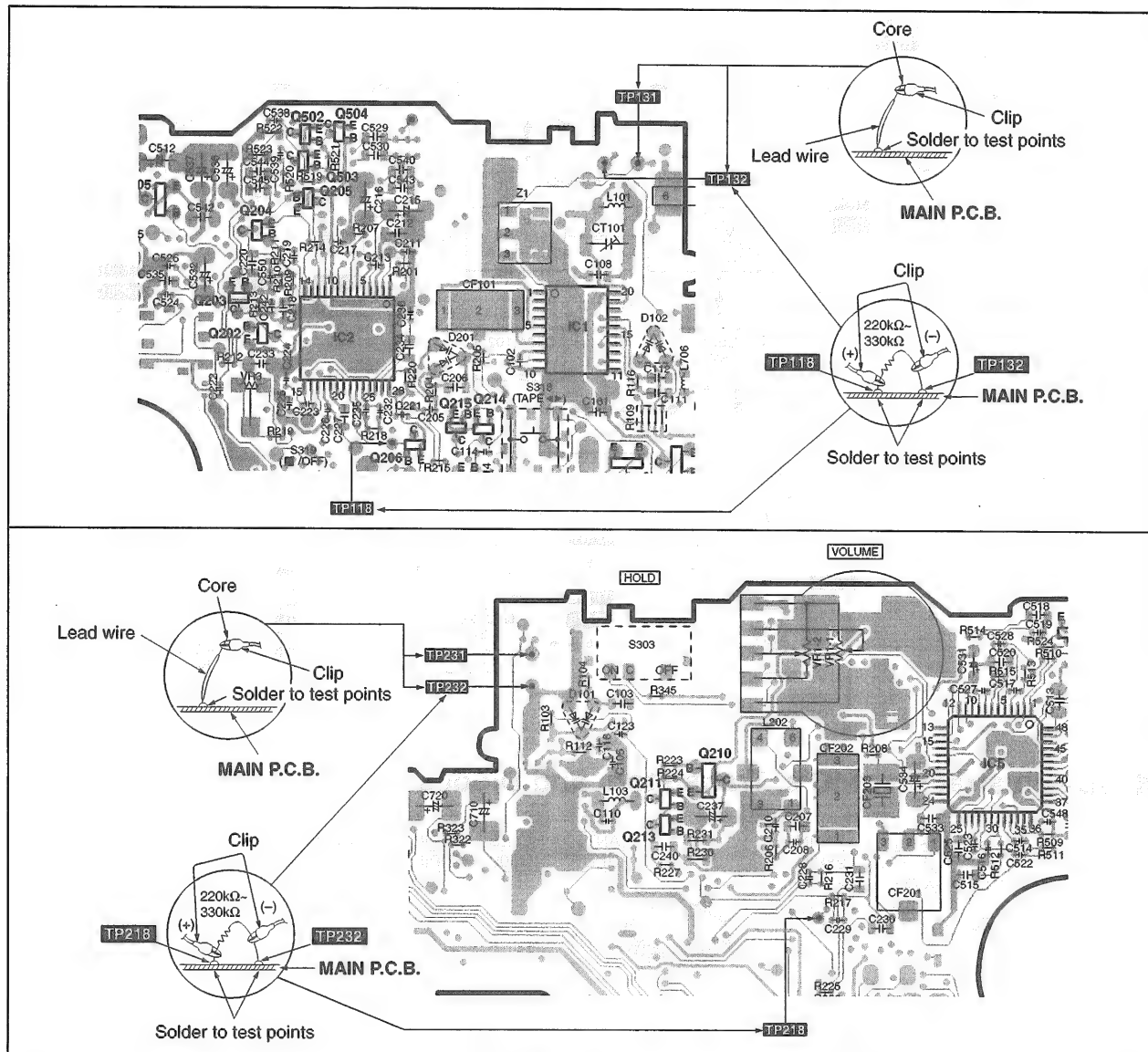


Fig. 1

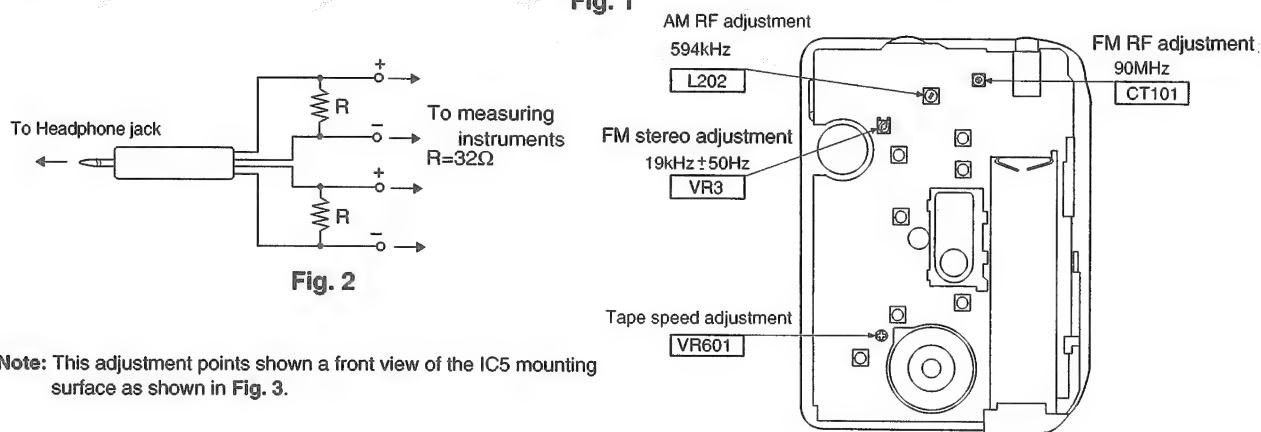
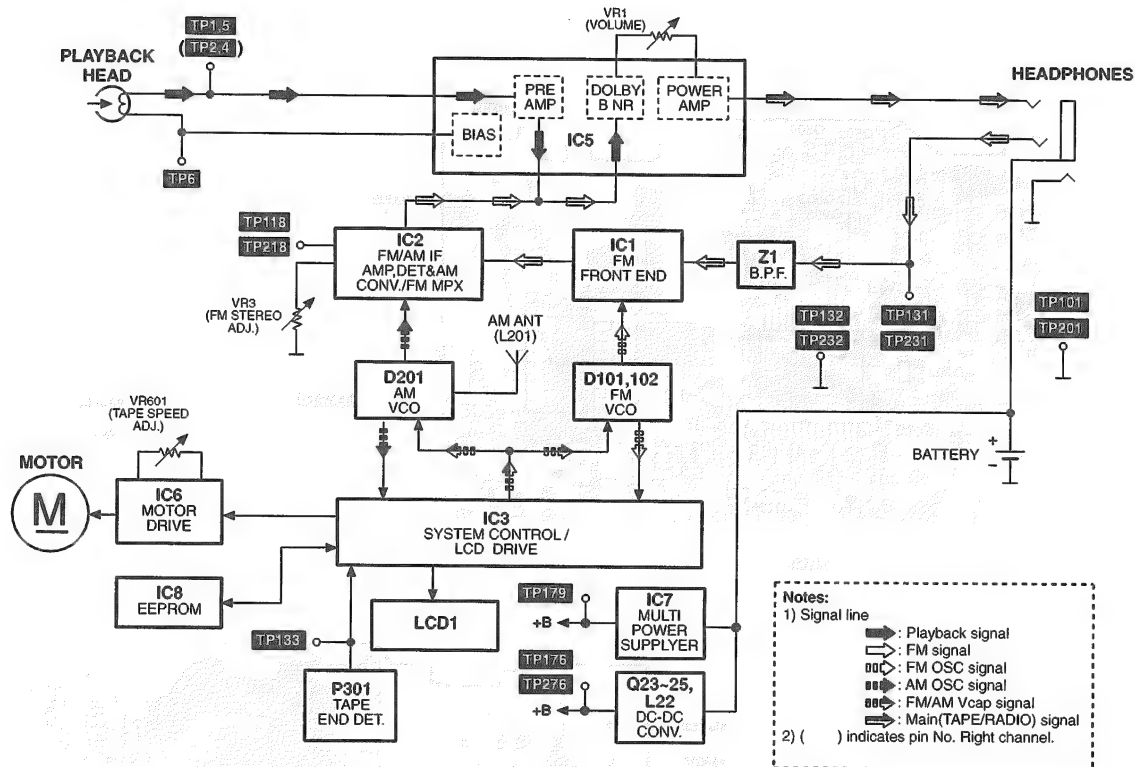


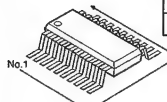
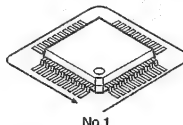
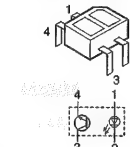
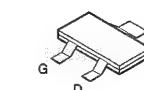
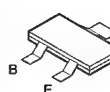
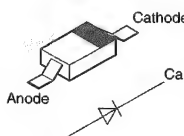
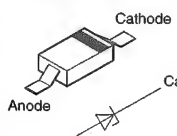
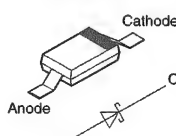
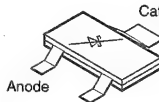
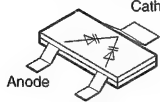
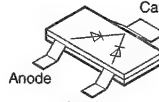
Fig. 3

Note: This adjustment points shown a front view of the IC5 mounting surface as shown in Fig. 3.

Block Diagram



Type Illustration of IC's, Transistors and Diodes

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--------------|------------|------------|----------|--------------|------------|--------------|--------------|---|--------------|------------|--------------|------------|--|---|------------|------------|----------|--|-----------|----------|--|--|---|--|
|  <table><tr><td>AN7208SA-E2</td><td>20PIN</td></tr><tr><td>AN7233SH-E2V</td><td>28PIN</td></tr><tr><td>MM1279XVBE</td><td>20PIN</td></tr><tr><td>S29L130AFSTB</td><td>8PIN</td></tr><tr><td>XC651A1001VR</td><td>16PIN</td></tr></table> | AN7208SA-E2 | 20PIN | AN7233SH-E2V | 28PIN | MM1279XVBE | 20PIN | S29L130AFSTB | 8PIN | XC651A1001VR | 16PIN |  <table><tr><td>AN7500FHQ-EB</td><td>48PIN</td></tr><tr><td>UPD17934G509</td><td>80PIN</td></tr></table> | AN7500FHQ-EB | 48PIN | UPD17934G509 | 80PIN |  <p>CNB1002001AU</p> |  <p>2SK1067-4-TL</p> | | | | | | | | | | |
| AN7208SA-E2 | 20PIN | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AN7233SH-E2V | 28PIN | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MM1279XVBE | 20PIN | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S29L130AFSTB | 8PIN | | | | | | | | | | | | | | | | | | | | | | | | | | |
| XC651A1001VR | 16PIN | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AN7500FHQ-EB | 48PIN | | | | | | | | | | | | | | | | | | | | | | | | | | |
| UPD17934G509 | 80PIN | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  <table><tr><td>2SA1745-7-TL</td><td>2SD1048X7TX</td><td>UN9116TX</td></tr><tr><td>2SA1774STL</td><td>2SD2216RTX</td><td>UN9210TX</td></tr><tr><td>2SB815B7TX</td><td>2SD2216STX</td><td>UN9214TX</td></tr><tr><td>2SB1295-6-TB</td><td>2SD2436STXRA</td><td>UN9215TX</td></tr><tr><td>2SB1462RTX</td><td>DTA143ZETL</td><td>UNR911BJTX</td></tr><tr><td>2SB1462STX</td><td>DTC143ZETL</td><td>UNR921BJTX</td></tr><tr><td>2SC3931CTX</td><td>UN9110TX</td><td></td></tr><tr><td>2SC3935TX</td><td>UN9115TX</td><td></td></tr></table> | 2SA1745-7-TL | 2SD1048X7TX | UN9116TX | 2SA1774STL | 2SD2216RTX | UN9210TX | 2SB815B7TX | 2SD2216STX | UN9214TX | 2SB1295-6-TB | 2SD2436STXRA | UN9215TX | 2SB1462RTX | DTA143ZETL | UNR911BJTX | 2SB1462STX | DTC143ZETL | UNR921BJTX | 2SC3931CTX | UN9110TX | | 2SC3935TX | UN9115TX | |  <p>MA111TX</p> |  <p>MA8120MTX</p> |  <p>MA729TX</p> |
| 2SA1745-7-TL | 2SD1048X7TX | UN9116TX | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2SA1774STL | 2SD2216RTX | UN9210TX | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2SB815B7TX | 2SD2216STX | UN9214TX | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2SB1295-6-TB | 2SD2436STXRA | UN9215TX | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2SB1462RTX | DTA143ZETL | UNR911BJTX | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2SB1462STX | DTC143ZETL | UNR921BJTX | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2SC3931CTX | UN9110TX | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2SC3935TX | UN9115TX | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  <p>SB00703QTL</p> |  <p>SVC347S-TL RVDSVC203ATX</p> |  <p>MA142WKTX</p> | | | | | | | | | | | | | | | | | | | | | | | | | |

Schematic Diagram (See parts list on pages 31~33.)

● This schematic diagram may be modified at any time with development of new technology.)

Notes:

- **S13-1** : Tape IN/OUT det. switch in "OUT (OFF)" position.
[IN (ON)...Tape in, OUT (OFF)...Tape out]
- **S13-2** : Tape detector (METAL/NORMAL) switch in "OFF (METAL)" position.
- **S301** : Mechanism det. (FWD/STOP/REV) switch in "FWD" position.
- **S303** : HOLD (HOLD) switch in OFF position.
- **S312** : RADIO/BAND (RADIO/BAND) select switch.
- **S313** : FF/+ (FF) switch.
- **S314** : REW/- (REW) switch.
- **S315** : MODE (MODE) select switch.
- **S316** : SOUND SEL (SOUND SEL) switch.
- **S317** : •BATT. CHECK/ - AUTO (•BATT. CHECK/ - AUTO) switch.
- **S318** : TAPE/◀▶ (◀▶) switch.
- **S319** : ■/OFF (■) switch.
- **VR1** : Volume adjustment.
- **VR3** : FM stereo adjustment.
- **VR601** : Tape speed adjustment.
- DC voltage measurements are taken with electronics voltmeter from negative terminal of battery.
No mark...Playback, FM... < >, AM... ()
- Current consumption of tape playback and radio mode: About 64 mA.
- Battery current:
Vol. min...40 mA (FM) Vol. max...45 mA (FM)
30 mA (AM) 33 mA (AM)
36 mA (TAPE) 43 mA (TAPE)

Measurement instruction

| | |
|-------|------------------|
| AM: | 74dB/m, 30% Mod. |
| FM: | 60dB, 30% Mod. |
| TAPE: | 315Hz, 0dB |

Signal line

➡ : + B line

➡ : FM signal

⋯➡ : AM OSC signal

➡ : Main (Tape/Radio) signal

⋯⋯➡ : FM/AM Vcap signal

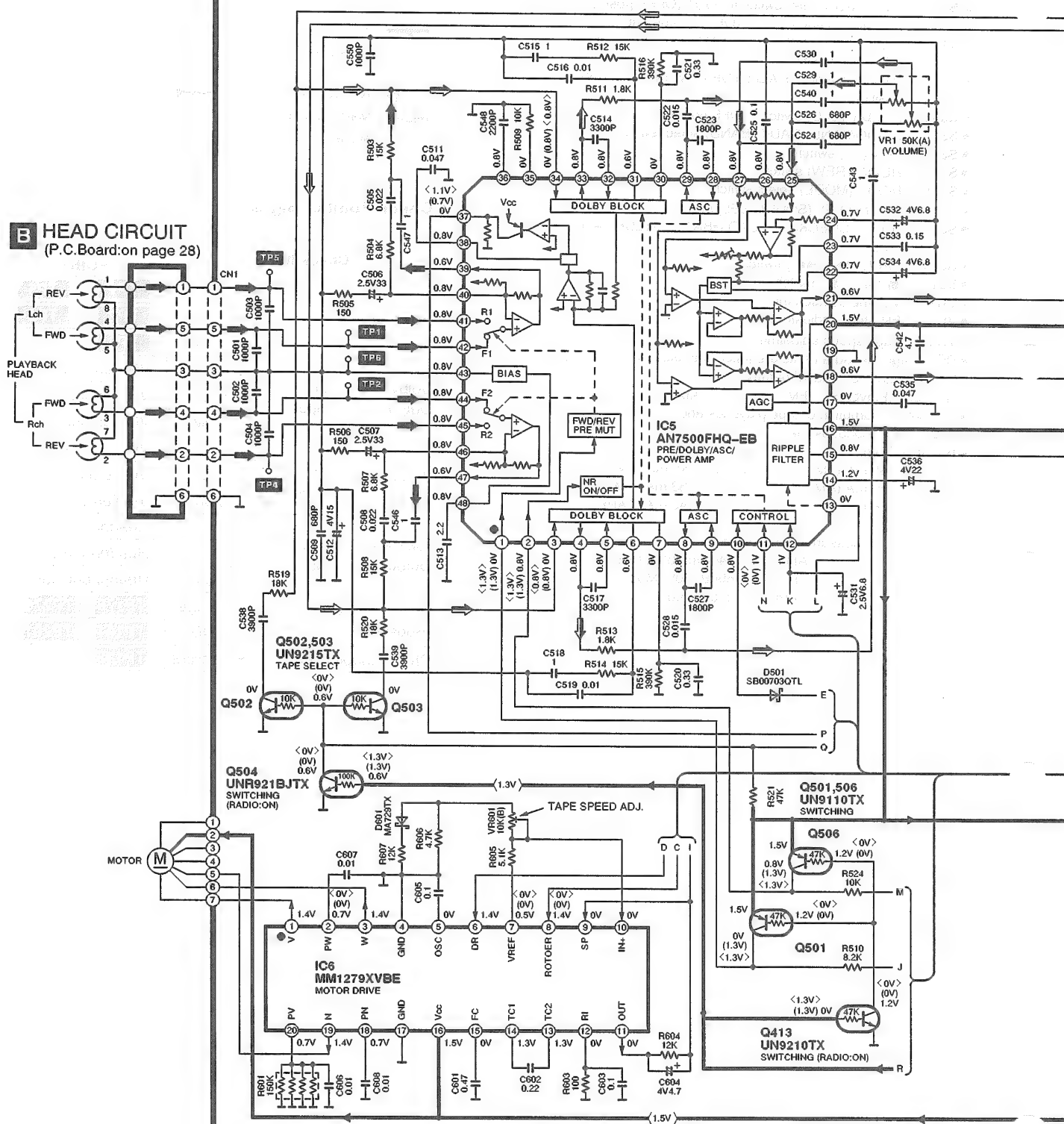
⋯⋯⋯➡ : FM OSC signal

➡ : Playback signal

Check Point of Signal

| Check Item | | TEST POINT |
|---------------------------------------|--------------|----------------|
| Head Input | L ch | TP1 , TP5 |
| | R ch | TP2 , TP4 |
| | VREF | TP6 |
| Dolby Output → VR Input | L ch | VR Terminal |
| | R ch | VR Terminal |
| | COM | VR Terminal |
| VR input → VR Output | L ch | VR Terminal |
| | R ch | VR Terminal |
| | COM | VR Terminal |
| Power amp. Output → Headphones Output | L ch | Headphone Jack |
| | R ch | Headphone Jack |
| | COM | Headphone Jack |
| DC-DC Converter (Booster) | 2.4V output | TP176 (TP276) |
| | GND | TP101 (TP201) |
| Photo Coupler (End) | Pulse output | TP133 |

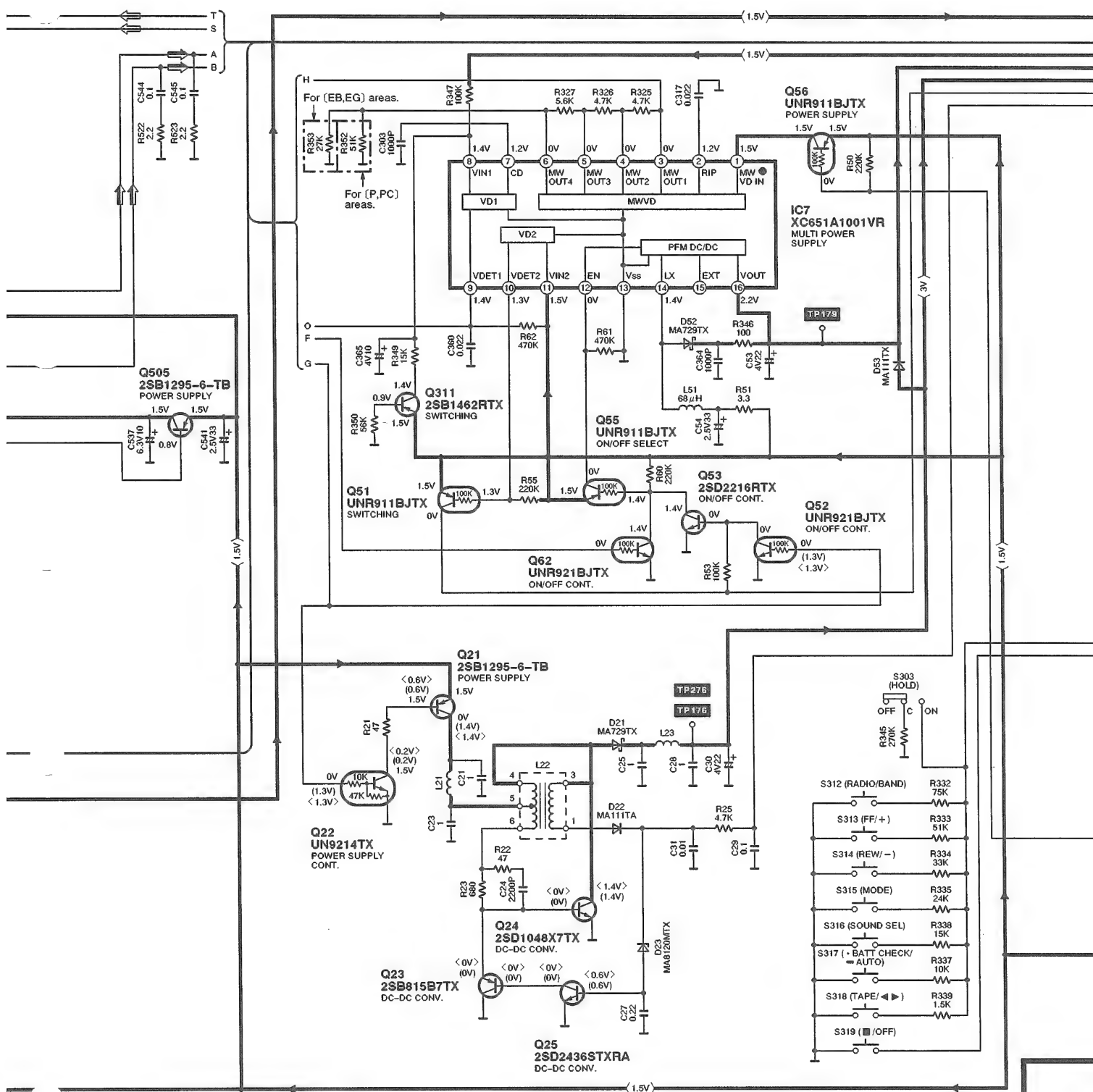
A MAIN CIRCUIT (P.C.Board: on pages 27,28)

B HEAD CIRCUIT
(P.C.Board: on page 28)

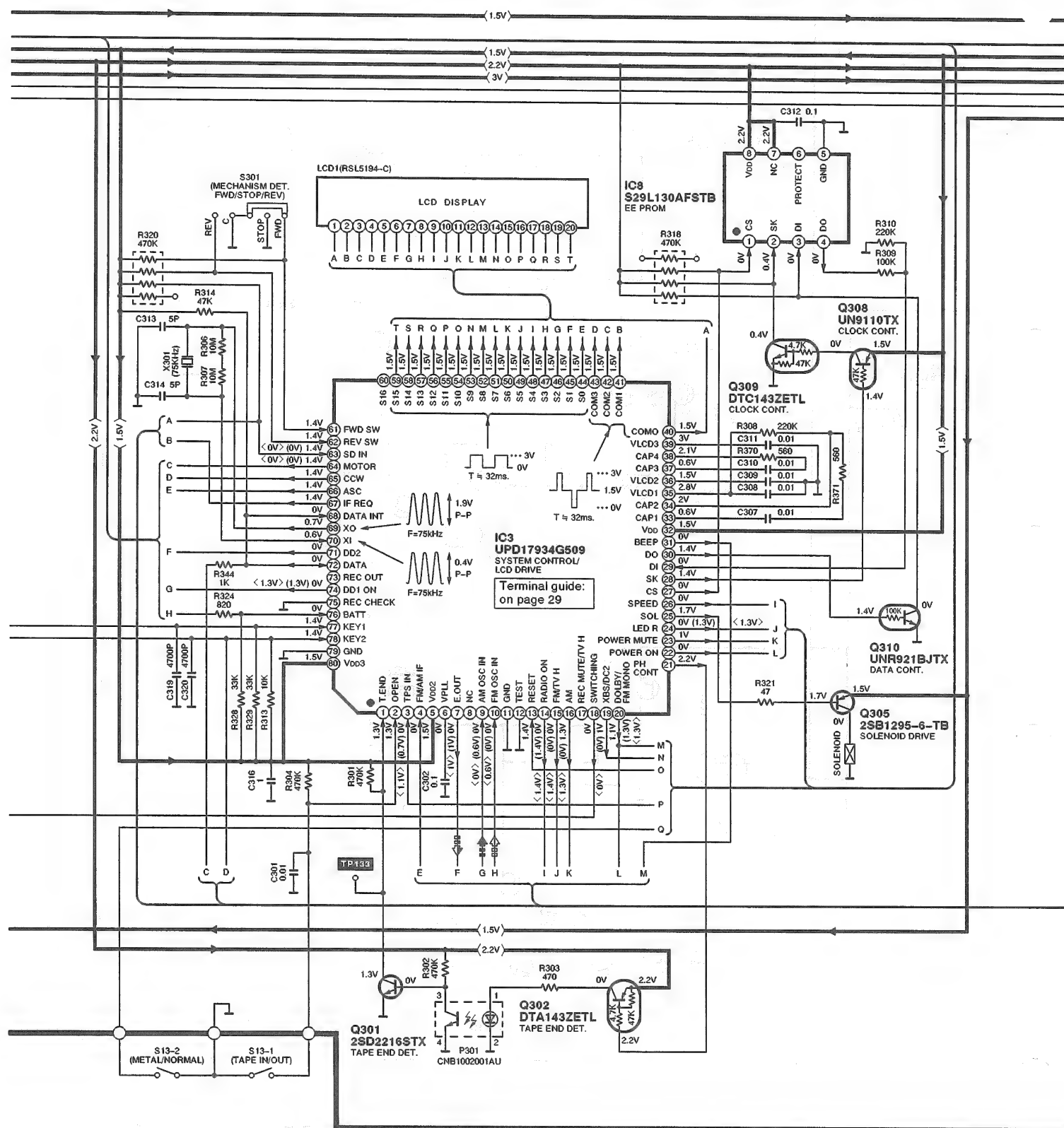
● Notes: \Rightarrow : FM signal line

\Rightarrow : Playback signal line

\Rightarrow : Main (Tape/Radio) signal line

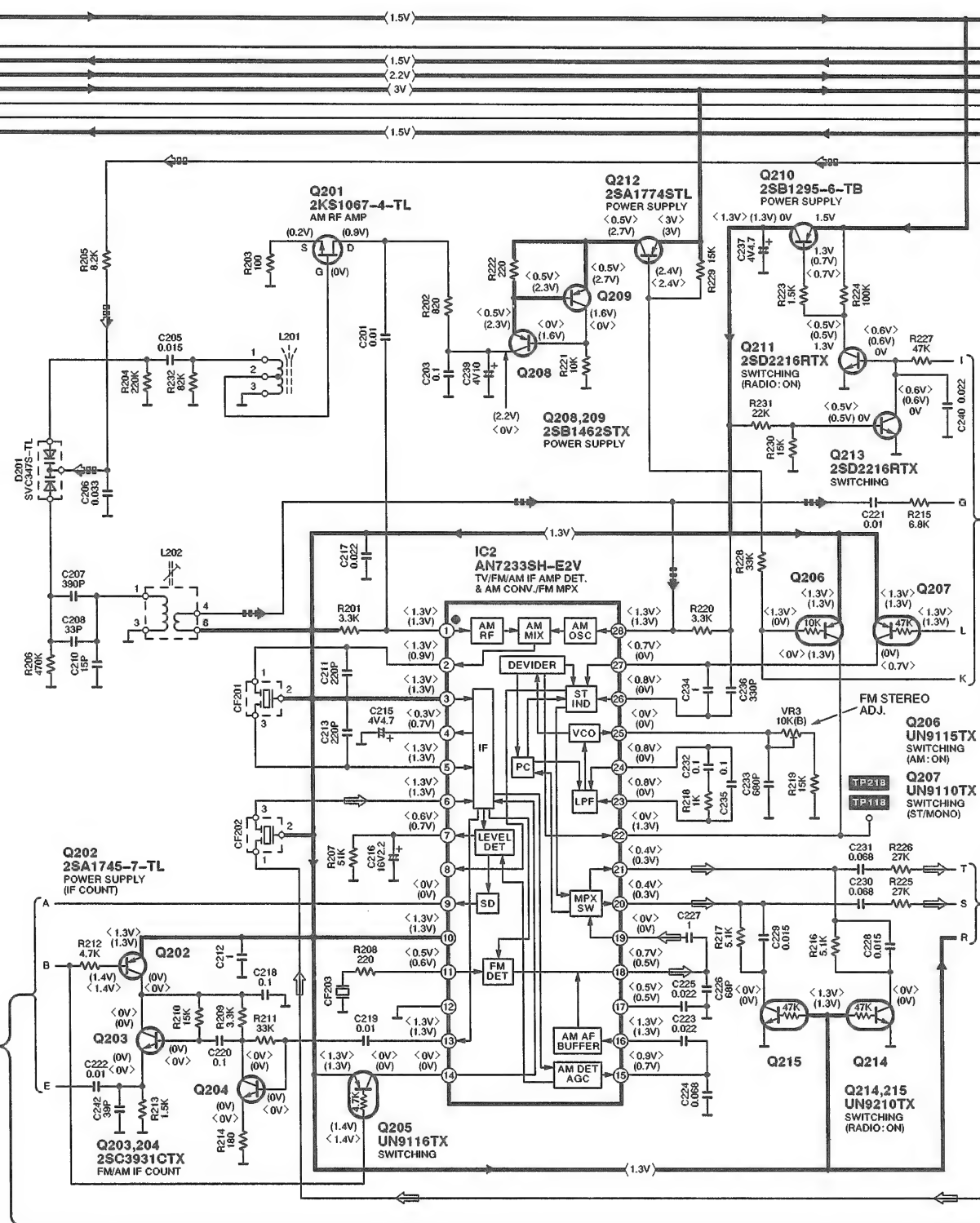


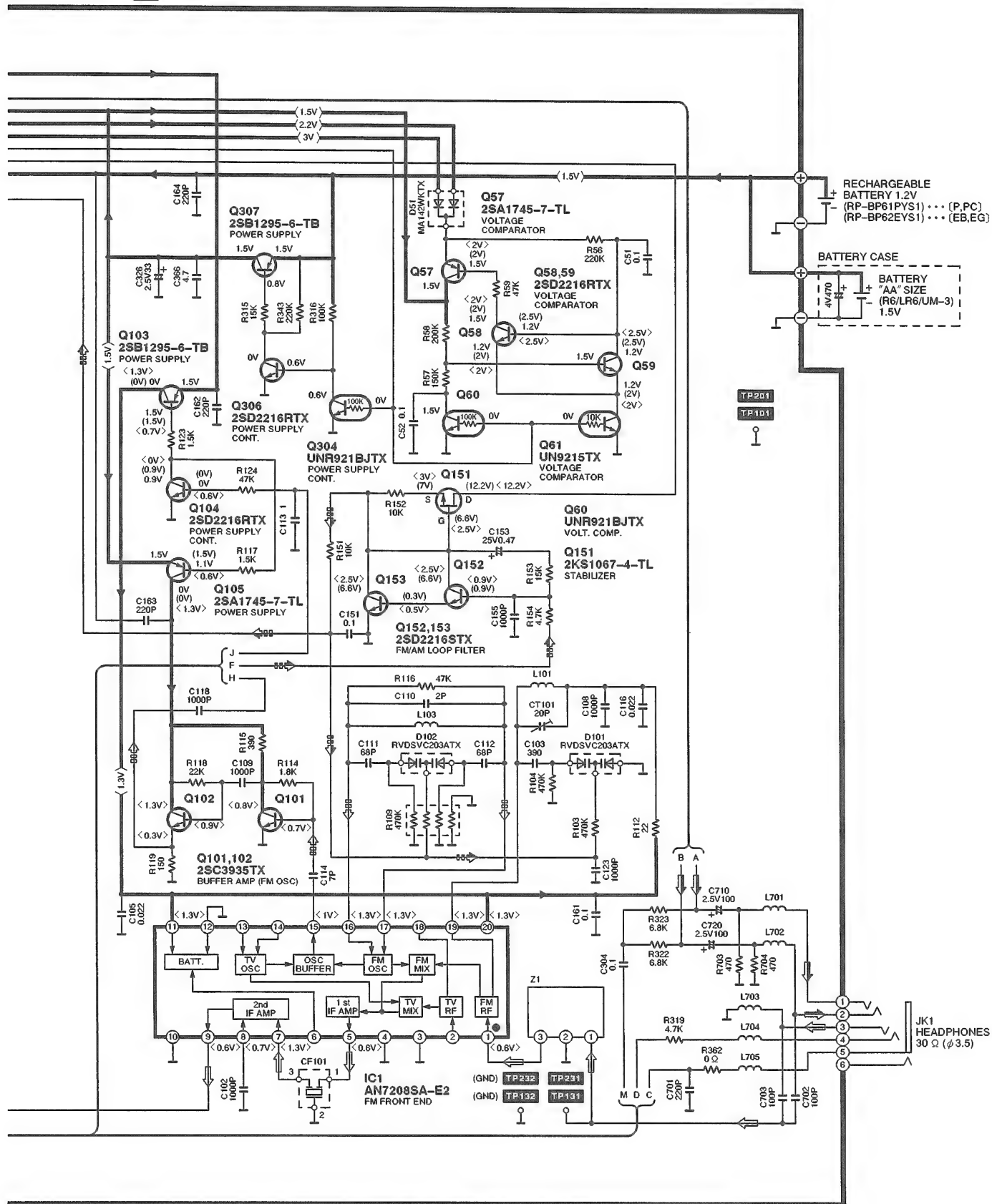
A MAIN CIRCUIT (P.C.Board: on pages 27,28)



• Notes: \Rightarrow : FM signal line
 \Rightarrow : AM OSC signal line

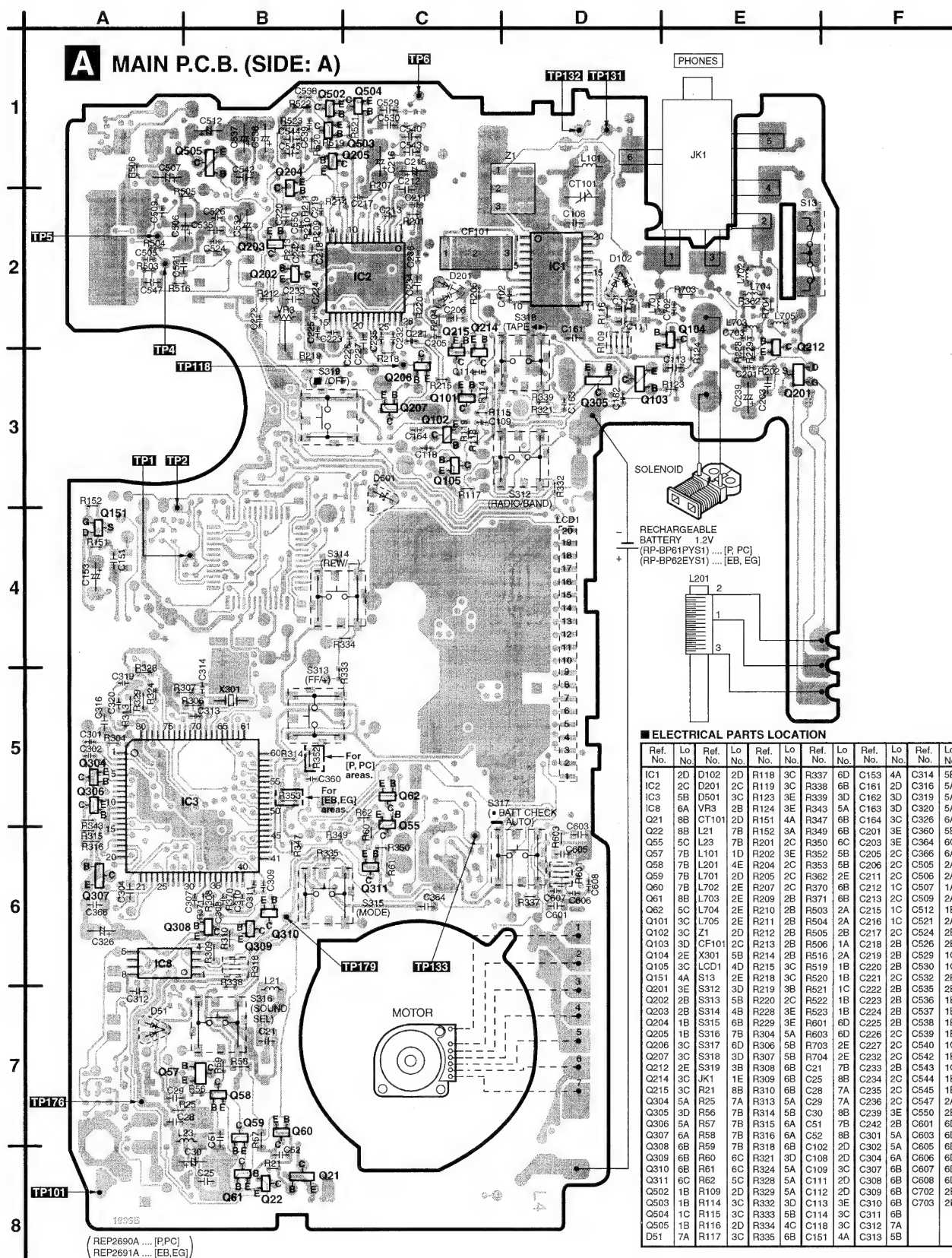
\Rightarrow : FM OSC signal line
 \Rightarrow : FM/AM Vcap signal line

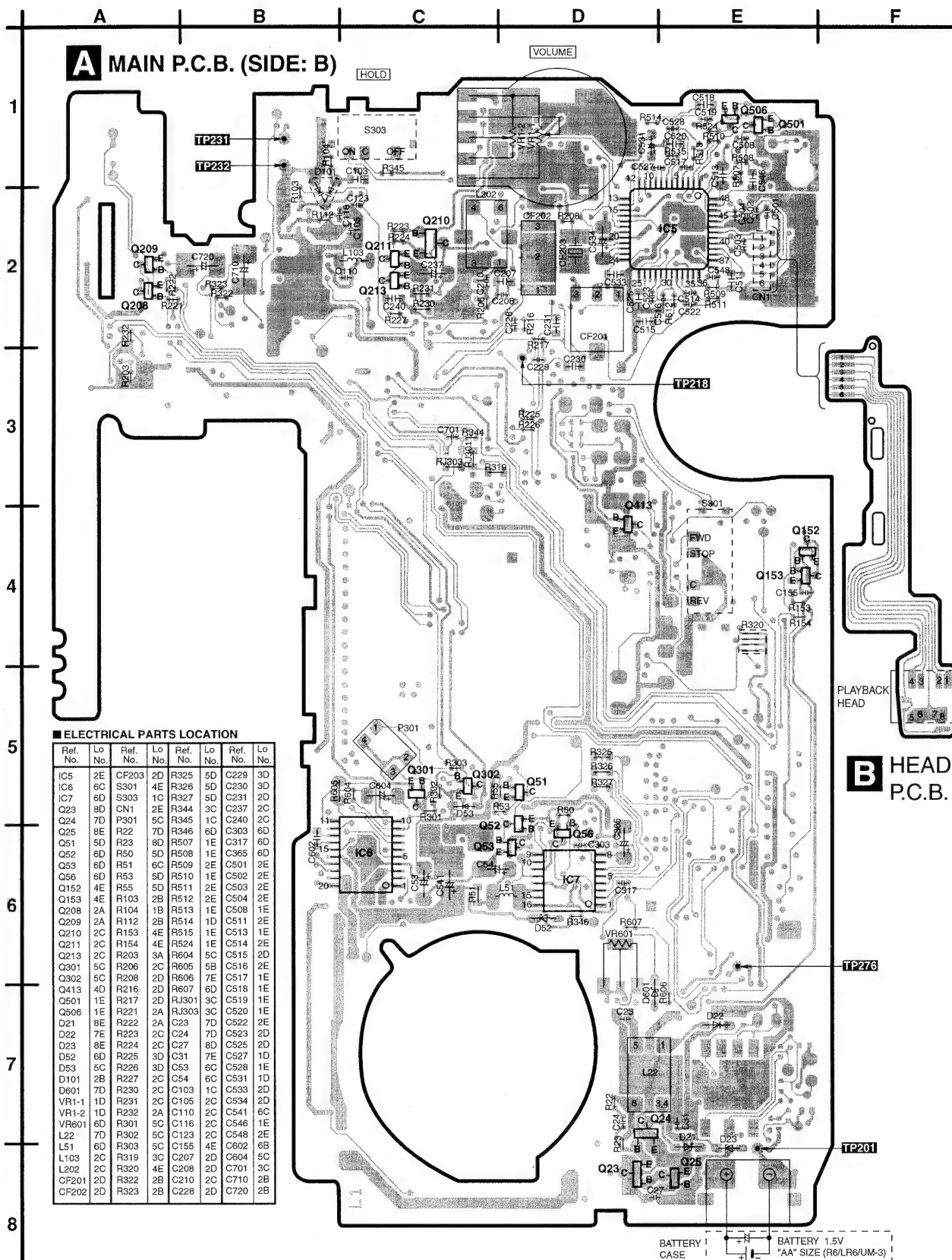


• Notes:  : FM signal line : Main (Tape/Radio) signal line : FM OSC signal line : FM/AM Vcap signal line**A** MAIN CIRCUIT (P.C.Board: on pages 27,28)

Printed Circuit Board and Wiring Connection Diagram

(This printed circuit board diagram may be modified at any time with the development of new technology.)





Terminal Guide

● IC3 (UPD17934G509): SYSTEM CONTROL/LCD DRIVE

| Pin No. | Mark | I/O Division | Function |
|---------|------------------|--------------|---|
| 1 | T.END | I | AM/FM input of port IC, timer event, IF counter |
| 2 | OPEN | I | |
| 3 | TPS IN | I | |
| 4 | FM/AM IF | I | |
| 5 | V _{DD2} | I | Power supply terminal |
| 6 | V _{PLL} | — | Regulator terminal for PLL |
| 7 | E.OUT | O | Output from charge pump for PLL frequency synthesizer |
| 8 | NC | — | Not used, open |
| 9 | AM OSC IN | I | VCO frequency of PLL input |
| 10 | FM OSC IN | I | |
| 11 | GND | — | GND terminal |
| 12 | TEST | — | Test input terminal. Connected to GND |
| 13 | RESET | I | Reset input |
| 14 | RADIO ON | O | 4 bit output port |
| 15 | FM/TV H | O | |
| 16 | AM | O | |
| 17 | REC MUTE /TV H | O | |
| 18 | SWITCHING | O | 2 bit output port |
| 19 | XBS/DC2 | O | |
| 20 | DOLBY /FM MONO | O | 4 bit output port |
| 21 | PH CONT | O | |
| 22 | POWER ON | O | |
| 23 | POWER MUTE | O | |
| 24 | LED R | O | 4 bit output port |
| 25 | SOL | O | |

| Pin No. | Mark | I/O Division | Function |
|---------|-----------------|--------------|---|
| 26 | SPEED | O | 4 bit output port |
| 27 | CS | O | |
| 28 | SK | O | POB and/or serial interface input/output and BEEP output |
| 29 | DI | I | |
| 30 | DO | O | |
| 31 | BEEP | O | |
| 32 | V _{DD} | I | Power supply terminal |
| 33 | CAP1 | — | Terminal to connect the condenser for dabura circuit to make LCD drive power supply |
| 34 | CAP2 | — | |
| 35 | VLCD1 | — | Regulator for LCD |
| 36 | VLCD2 | — | |
| 37 | CAP3 | — | Terminal to connect the condenser for dabura circuit to make LCD drive power supply |
| 38 | CAP4 | — | |
| 39 | VLCD3 | — | Regulator for LCD |
| 40 | COM0 | O | LCD controller/driver common signal output |
| 41 | COM1 | O | |
| 42 | COM2 | O | |
| 43 | COM3 | O | |
| 44 | S0 | O | LCD controller/driver segment signal output |
| 45 | S1 | O | |
| 46 | S2 | O | |
| 47 | S3 | O | |
| 48 | S4 | O | |
| 49 | S5 | O | |
| 50 | S6 | O | |

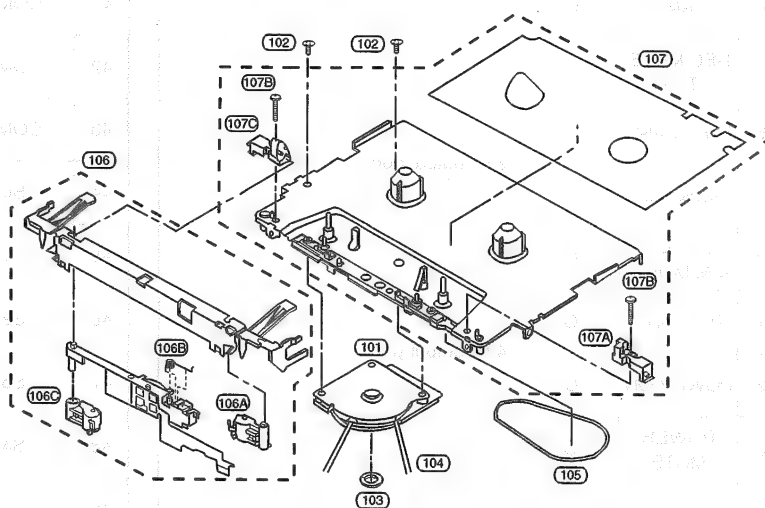
| Pin No. | Mark | I/O Division | Function |
|---------|--------|--------------|--|
| 51 | S7 | O | LCD controller/driver segment signal output |
| 52 | S8 | O | |
| 53 | S9 | O | |
| 54 | S10 | O | |
| 55 | S11 | O | |
| 56 | S12 | O | |
| 57 | S13 | O | |
| 58 | S14 | O | |
| 59 | S15 | O | |
| 60 | S16 | — | |
| 61 | FWD SW | I | Port 2A input and/or LCD controller/driver segment signal output |
| 62 | REV SW | I | |
| 63 | SD IN | I | |
| 64 | MOTOR | O | 4 bit output |
| 65 | CCW | O | |

| Pin No. | Mark | I/O Division | Function |
|---------|-----------|--------------|---|
| 66 | ASC | O | 4 bit output |
| 67 | IF REQ | O | |
| 68 | DATA INT | I | Becta interface input of edge det. |
| 69 | X0 | O | Crystal oscillator connection terminal |
| 70 | X1 | I | |
| 71 | DD2 | O | 4 bit input/output port |
| 72 | DATA | I/O | |
| 73 | REC OUT | — | |
| 74 | DD1 ON | O | |
| 75 | REC CHECK | — | Port 0D input, A/D converter input, HALT, STOP loose signal input |
| 76 | BATT | I | |
| 77 | KEY1 | I | |
| 78 | KEY2 | I | |
| 79 | GND | — | GND terminal |
| 80 | VDD3 | I | Power supply terminal |

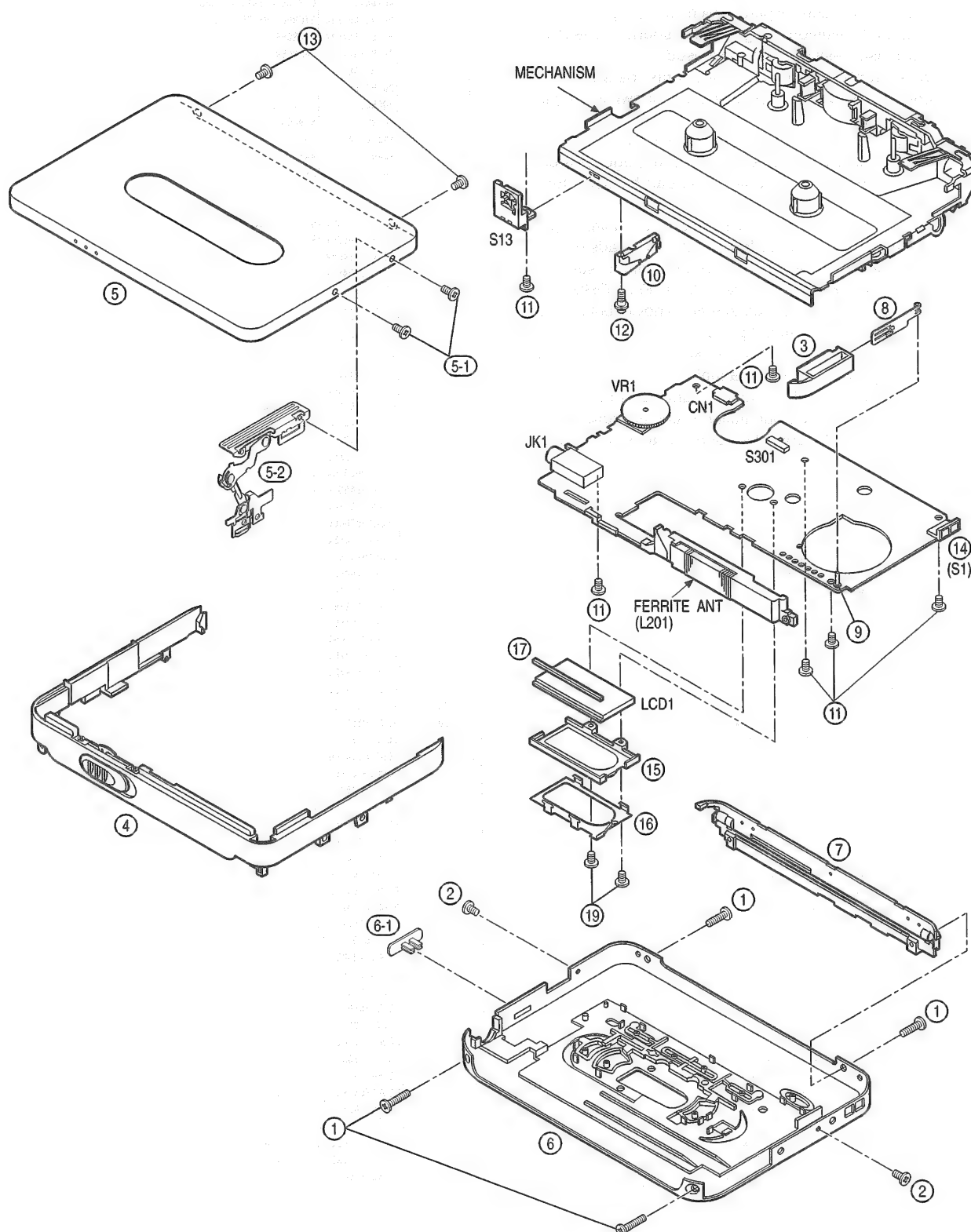
■ Mechanism Parts Location

| Item | FWD & REV mode |
|--------------------------|---------------------|
| Wow and flutter | 0.3 % (WRMS) |
| Pressure of pinch roller | 110±10 g |
| Take-up tension | More than 60 g |
| Playback torque | 20±5 g |
| FF/REW torque | More than 60 g · cm |

The parts enclosed in the dotted boxes are supplied as a block assembly. Therefore, they are not supplied separately except parts indicated with Ref. No.



■ Cabinet Parts Location



■ Replacement Parts List

Notes: * Important safety notice:

Components identified by Δ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

* Capacity values are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)

* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM)

※ This item is not attached to merchandise, but it is supplied as a replacement parts.

* <IA>, <IB>, <IC>, <ID>, marks in Remarks indicate language of instruction manual.

[<IA>: English, <IB>: English/Canadian French,

<IC>: English/German/Italian/French/Spanish,

<ID>: Dutch/Swedish/Danish/Russian/Polish/Czech]

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|---------|-------------|---------------------------|-----|---------------|
| 1 | RHD14058-S | SCREW | 4 | |
| 2 | RHD14057-S | SCREW | 2 | |
| 3 | RKK0100-S | BATTERY COVER | 1 | |
| 4 | RYQ0214A-H | INTERMEDIATE ORNAMENT (A) | 1 | |
| 5 | RYF0468-S | CASSETTE LID ASS'Y | 1 | |
| 5-1 | RHQ0062-S | SCREW | 2 | |
| 5-2 | RXM0067 | LINK UNIT | 1 | |
| 6 | RYK0814C-S | CABINET ASS'Y | 1 | |
| 6-1 | RGV0227-H | KNOB | 1 | |
| 7 | RYK0815A-H | INTERMEDIATE ORNAMENT (B) | 1 | |
| 8 | RJC99027 | R. BATTERY TERMINAL (+) | 1 | |
| 9 | RJR0154-1 | BATTERY SHAFT | 1 | |
| 10 | RJC99028 | R. BATTERY TERMINAL (-) | 1 | |
| 11 | RHQ0060-N | SCREW | 6 | |
| 12 | RHQ0013-1 | SCREW | 1 | |
| 13 | RHQ0032-S | SCREW | 2 | |
| 14 | RJH9208-1 | CONNECTION TERMINAL (S1) | 1 | |
| 15 | RGF0666-Q | LCD PANEL | 1 | |
| 16 | RMA1155 | LCD HOLDER | 1 | |
| 17 | RSQ0059 | ZEBRA CONNECTOR | 1 | |
| 19 | RHQ0079-Y | SCREW | 2 | |
| 101 | BFL26NB1CT | MOTOR | 1 | |
| 102 | XQS14+A2FZ | SCREW | 2 | |
| 103 | RHW40002 | WASHER | 1 | |
| 104 | RDV0037 | CAPSTAN BELT (1) | 1 | |
| 105 | RDV0038 | CAPSTAN BELT (2) | 1 | |
| 106 | RXQ0445-4 | HEAD BLOCK ASS'Y | 1 | |
| 106A | RXL0130 | PINCH ROLLER ARM (F) | 1 | |
| 106B | RME0187-1 | HEAD ARM SPRING | 1 | |
| 106C | RXL0131 | PINCH ROLLER ARM (R) | 1 | |
| 107 | RFKRQ5X75-S | MECHANISM BLOCK ASS'Y | 1 | |
| 107A | RMQ0547 | HOLD PIECE (F) | 1 | |
| 107B | RHD14047 | SCREW | 1 | |
| 107C | RMQ0548 | HOLD PIECE (R) | 1 | |
| A1 | RQT4503-P | INSTRUCTION MANUAL | 1 | (P) <IA> |
| A1 | RQT4504-C | INSTRUCTION MANUAL | 1 | (PC) <IB> |
| A1 | RQT4505-B | INSTRUCTION MANUAL | 1 | (EB, EG) <IC> |

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|-------------|---------------|--------------------------|-----|-----------|
| A1 | RQT4515-E | INSTRUCTION MANUAL | 1 | (EG) <ID> |
| A2 | RP-BP61PYS1 | RECHARGEABLE BATTERY | 1 | (P, PC) |
| A2 | RP-BP62EYS1 | RECHARGEABLE BATTERY | 1 | (EB, EG) |
| A2-1 | RFA0475-Q | R. BATTERY CARRYING CASE | 1 | |
| A3 | RFA0617-H | DRY CELL BATTERY CASE | 1 | |
| A6 | RFEV316P-K1S | STEREO INSIDE PHONES | 1 | |
| Δ A7 | RP-BC155A EYA | CHARGER | 1 | (EB, EG) |
| Δ A7 | RP-BC155A PY | CHARGER | 1 | (P) |
| Δ A7 | RP-BC155A PCY | CHARGER | 1 | (PC) |
| A9 | RQCB0169 | SERVICENTER LIST | 1 | (EB, EG) |
| A9 | RQCB0391 | SERVICENTER LIST | 1 | (P, PC) |
| A10 | RFEV012P-KS | REMOCON | 1 | |
| A11※ | RKB205ZA-0 | EAR PADS | 1 | |
| A12 | RQA0117 | WARRANTY CARD | 1 | (EB, EG) |
| A12 | SQX7183 | WARRANTY CARD | 1 | (PC) |
| C21, 23 | ECUV0J105ZFV | 6.3V 1U | 2 | |
| C24 | ECUE1H22KBQ | 50V 2200P | 1 | |
| C25, 28 | ECUV0J105ZFV | 6.3V 1U | 2 | |
| C27 | ECUV1A224KBV | 10V 0.22U | 1 | |
| C29 | ECUV1C104KBV | 16V 0.1U | 1 | |
| C30 | RCSX0GY226RE | 4V 22U | 1 | |
| C31 | ECUE1C103KBQ | 16V 0.01U | 1 | |
| C51 | ECUVNC104ZFV | 16V 0.1U | 1 | |
| C52 | ECUV1C104KBV | 16V 0.1U | 1 | |
| C53 | RCSX0GY226RE | 4V 22U | 1 | |
| C54 | RCSX0EY336RE | 2.5V 33U | 1 | |
| C102 | ECUE1H102KBQ | 50V 1000P | 1 | |
| C103 | ECUV1H391GCV | 50V 390P | 1 | |
| C105 | ECUE1C223KBQ | 16V 0.022U | 1 | |
| C108 | ECUV1H102KBV | 50V 1000P | 1 | |
| C109 | ECUE1H102KBQ | 50V 1000P | 1 | |
| C110 | ECUE1H020CCV | 50V 2P | 1 | |
| C111, 12 | ECUV1H680GCV | 50V 68P | 2 | |
| C113 | ECUV0J105ZFV | 6.3V 1U | 1 | |
| C114 | ECUE1H070CCV | 50V 7P | 1 | |
| C116 | ECUE1C223KBQ | 16V 0.022U | 1 | |
| C118, 23 | ECUE1H102KBQ | 50V 1000P | 2 | |
| C151 | ECUV1C104KBV | 16V 0.1U | 1 | |
| C153 | RCST1EY474RE | 25V 0.47U | 1 | |
| C155 | ECUE1H102KBQ | 50V 1000P | 1 | |
| C161 | ECUV1C104KBV | 16V 0.1U | 1 | |
| C162-64 | ECUE1H221KBQ | 50V 220P | 3 | |
| C201 | ECUE1H103ZFQ | 50V 0.01U | 1 | |
| C203 | ECUE1C104ZFQ | 16V 0.1U | 1 | |
| C205 | ECUE1C153KBQ | 16V 0.015U | 1 | |
| C206 | RCUV1C333KBV | 16V 0.033U | 1 | |
| C207 | ECUV1H391GCV | 50V 390P | 1 | |
| C208 | ECUE1H330JCQ | 50V 33P | 1 | |
| C210 | ECUE1H150JCQ | 50V 15P | 1 | |
| C211 | ECUE1H221KBQ | 50V 220P | 1 | |
| C212 | ECUV0J105ZFV | 6.3V 1U | 1 | |
| C213 | ECUE1H221KBQ | 50V 220P | 1 | |
| C215 | RCST0GY475RG | 4V 4.7U | 1 | |
| C216 | RCST1CY225RG | 16V 2.2U | 1 | |
| C217 | ECUE1C223KBQ | 16V 0.022U | 1 | |
| C218 | ECUVNC104ZFV | 16V 0.1U | 1 | |
| C219 | ECUE1C103KBQ | 16V 0.01U | 1 | |
| C220 | ECUE1C104ZFQ | 16V 0.1U | 1 | |
| C221 | ECUE1H103ZFQ | 50V 0.01U | 1 | |
| C222 | ECUE1C103KBQ | 16V 0.01U | 1 | |
| C223 | ECUE1C223KBQ | 16V 0.022U | 1 | |
| C224 | ECUVJ683KBQ | 63V 0.068U | 1 | |
| C225 | ECUE1C223KBQ | 16V 0.022U | 1 | |
| C226 | ECUE1H680JCQ | 50V 68P | 1 | |
| C227 | ECUV0J105ZFV | 6.3V 1U | 1 | |
| C228, 29 | ECUE1C153KBQ | 16V 0.015U | 2 | |
| C230, 31 | ECUV1C683KBV | 16V 0.068U | 2 | |
| C232 | ECUVJ104KBQ | 63V 0.1U | 1 | |
| C233 | ECUV1H681KCN | 50V 680P | 1 | |
| C234 | ECUV0J105ZFV | 6.3V 1U | 1 | |
| C235 | ECUVJ104KBQ | 63V 0.1U | 1 | |
| C236 | ECUE1H331KBQ | 50V 330P | 1 | |
| C237 | RCST0GY475RG | 4V 4.7U | 1 | |
| C239 | RCSX0GY106RE | 4V 10U | 1 | |

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks | Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|----------|--------------|-------------------------|-----|----------|----------|--------------|-------------------------|-----|----------------|
| C240 | ECUV1C223KBV | 16V 0.022U | 1 | | D21 | MA729TX | DIODE | 1 | |
| C242 | ECUE1H390JCQ | 50V 39P | 1 | | D22 | MA111TX | DIODE | 1 | |
| C301 | ECUE1C103KBQ | 16V 0.01U | 1 | | D23 | MA8120M | DIODE | 1 | |
| C302 | ECUVNC104ZFY | 16V 0.1U | 1 | | D51 | MA142WKT | DIODE | 1 | |
| C303 | ECUE1H102KBQ | 50V 1000P | 1 | | D52 | MA729TX | DIODE | 1 | |
| C304 | ECUVNC104ZFY | 16V 0.1U | 1 | | D53 | MA111TX | DIODE | 1 | |
| C307-11 | ECUE1C103KBQ | 16V 0.01U | 5 | | D101, 02 | RVD5VC203ATX | DIODE | 2 | |
| C312 | ECUVNC104ZFY | 16V 0.1U | 1 | | D201 | SVC347S-TL | DIODE | 1 | |
| C313, 14 | ECUE1H0500CQ | 50V 5P | 2 | | D501 | SB00703QTL | DIODE | 1 | |
| C316 | ECUV0J105ZFY | 6.3V 1U | 1 | | D601 | MA729TX | DIODE | 1 | |
| C317 | ECUE1C223KBQ | 16V 0.022U | 1 | | | | | | |
| C319, 20 | ECUE1E472KBQ | 25V 4700P | 2 | | IC1 | AN7208SA-E2 | IC | 1 | |
| C326 | ECST0EY336RR | 2.5V 33U | 1 | | IC2 | AN7233SH-E2V | IC | 1 | |
| C360 | ECUE1C223KBQ | 16V 0.022U | 1 | | IC3 | UPD17934G509 | IC | 1 | |
| C364 | ECUVNC473KBV | 16V 0.047U | 1 | | IC5 | AN7500FHQ-EB | IC | 1 | |
| C365 | RCSX0GY106RE | 4V 10U | 1 | | IC6 | MM1279XVBE | IC | 1 | |
| C366 | ECUV1A475ZFN | 10V 4.7U | 1 | | IC7 | XC651A1001VR | IC | 1 | |
| C501-04 | ECUE1H102KBQ | 50V 1000P | 4 | | IC8 | S29L130AFSTB | IC | 1 | |
| C505 | ECUE1C223KBQ | 16V 0.022U | 1 | | | | | | |
| C506, 07 | RCSX0EY336RE | 2.5V 33U | 2 | | | | | | |
| C508 | ECUE1C223KBQ | 16V 0.022U | 1 | | JK1 | RJJ36TK03-1C | JACK, HEADPHONES | 1 | |
| C509 | ECUE1H681KBQ | 50V 680P | 1 | | | | | | |
| C511 | ECUVNC473KBV | 16V 0.047U | 1 | | L21 | RLBN102V-Y | COIL, CHOKE | 1 | |
| C512 | RCSX0GY156RG | 4V 15U | 1 | | L22 | RL09U022T-M | COIL, DC-DC CONV. | 1 | |
| C513 | ECUVNA225KBN | 10V 2.2U | 1 | | L23 | RLBN182DV-Y | COIL, CHOKE | 1 | |
| C514 | ECUE1E332KBQ | 25V 3300P | 1 | | L51 | ELJSA680KF | COIL, CHOKE | 1 | |
| C515, 18 | ECUV0J105ZFY | 6.3V 1U | 2 | | L101 | RL04Z030T-W | COIL, CHOKE | 1 | |
| C516 | ECUE1C103KBQ | 16V 0.01U | 1 | | L103 | RL04Z029T-W | COIL, CHOKE | 1 | |
| C517 | ECUE1E332KBQ | 25V 3300P | 1 | | L201 | RLV2N045-0 | COIL, FERRITE ANT. | 1 | |
| C519 | ECUE1C103KBQ | 16V 0.01U | 1 | | L202 | RL02U027T-M | COIL, OSC | 1 | |
| C520, 21 | ECUVNC334ZFY | 16V 0.33U | 2 | | L701-05 | RLBV601AV-Y | COIL, CHOKE | 5 | |
| C522 | ECUE1C153KBQ | 16V 0.015U | 1 | | | | | | |
| C523 | ECUE1H182KBQ | 50V 1800P | 1 | | LCD1 | RSL5194-C | LCD DISPLAY | 1 | |
| C524 | ECUE1H681KBQ | 50V 680P | 1 | | | | | | |
| C525 | ECUV1C104KBV | 16V 0.1U | 1 | | P1 | RPK1062 | PACKING CASE | 1 | (EB, EG) |
| C526 | ECUE1H681KBQ | 50V 680P | 1 | | P1 | RPK1063 | PACKING CASE | 1 | (P, PC) |
| C527 | ECUE1H182KBQ | 50V 1800P | 1 | | P3 | RPQ0581-1 | SPACER | 1 | |
| C528 | ECUE1C153KBQ | 16V 0.015U | 1 | | P4 | RPQ0575 | PAD | 1 | (EB, EG) |
| C529, 30 | ECUV0J105ZFY | 6.3V 1U | 2 | | P5 | RPF0127 | PROTECTION BAG(UNIT) | 1 | |
| C531 | RCST0EZ685RE | 2.5V 6.8U | 1 | | P301 | CNB1002001AU | PHOTO COUPLER | 1 | |
| C532 | RCST0GA685RE | 4V 6.8U | 1 | | | | | | |
| C533 | ECUV1A154KBV | 10V 0.15U | 1 | | PCB1 | REP2690A | MAIN P.C.B | 1 | (RTL) (P, PC) |
| C534 | RCST0GY685RG | 4V 6.8U | 1 | | PCB1 | REP2691A | MAIN P.C.B. | 1 | (RTL) (EB, EG) |
| C535 | ECUVNC473KBV | 16V 0.047U | 1 | | | | | | |
| C536 | RCSX0GY226RE | 4V 22U | 1 | | Q21 | 2SB1295-6-TB | TRANSISTOR | 1 | |
| C537 | RCST0JY106TG | 6.3V 10U | 1 | | Q22 | UN9214TX | TRANSISTOR | 1 | |
| C538, 39 | ECUE1E392KBQ | 25V 3900P | 2 | | Q23 | 2SB815B7TX | TRANSISTOR | 1 | |
| C540, 43 | ECUV0J105ZFY | 6.3V 1U | 2 | | Q24 | 2SD1048K7TX | TRANSISTOR | 1 | |
| C541 | ECST0EY336RR | 2.5V 33U | 1 | | Q25 | 2SD2436STXRA | TRANSISTOR | 1 | |
| C542 | ECUV1A475ZFN | 10V 4.7U | 1 | | Q51 | UNR911BJTX | TRANSISTOR | 1 | |
| C544, 45 | ECUV1C104KBV | 16V 0.1U | 2 | | Q52 | UNR921BJTX | TRANSISTOR | 1 | |
| C546, 47 | ECUV0J105ZFY | 6.3V 1U | 2 | | Q53 | 2SD2216RTX | TRANSISTOR | 1 | |
| C548 | ECUE1H222KBQ | 50V 2200P | 1 | | Q55, 56 | UNR911BJTX | TRANSISTOR | 2 | |
| C550 | ECUE1H102KBQ | 50V 1000P | 1 | | Q57 | 2SA1745-7-TL | TRANSISTOR | 1 | |
| C601 | ECUV0J474KBV | 6.3V 0.47U | 1 | | Q58, 59 | 2SD2216RTX | TRANSISTOR | 2 | |
| C602 | ECUV1A224KBV | 10V 0.22U | 1 | | Q60 | UNR921BJTX | TRANSISTOR | 1 | |
| C603 | ECUV1C104KBV | 16V 0.1U | 1 | | Q61 | UN9215TX | TRANSISTOR | 1 | |
| C604 | RCST0GY475RG | 4V 4.7U | 1 | | Q62 | UNR921BJTX | TRANSISTOR | 1 | |
| C605 | ECUV1C104KBV | 16V 0.1U | 1 | | Q101, 02 | 2SC3935TX | TRANSISTOR | 2 | |
| C606-08 | ECUE1C103KBQ | 16V 0.01U | 3 | | Q103 | 2SB1295-6-TB | TRANSISTOR | 1 | |
| C701 | ECUE1H221KBQ | 50V 220P | 1 | | Q104 | 2SD2216RTX | TRANSISTOR | 1 | |
| C702, 03 | ECUE1H101KBQ | 50V 100P | 2 | | Q105 | 2SA1745-7-TL | TRANSISTOR | 1 | |
| C710 | RCST0EX107RE | 2.5V 100U | 1 | | Q151 | 2SK1067-4-TL | TRANSISTOR | 1 | |
| C720 | RCST0EX107RE | 2.5V 100U | 1 | | Q152, 53 | 2SD2216STX | TRANSISTOR | 2 | |
| | | | | | Q201 | 2SK1067-4-TL | TRANSISTOR | 1 | |
| | | | | | Q202 | 2SA1745-7-TL | TRANSISTOR | 1 | |
| CF101 | RLFFECWN02AL | CERAMIC FILTER | 1 | | Q203, 04 | 2SC3931CTX | TRANSISTOR | 2 | |
| CF201 | RLFEFCM3450A | CERAMIC FILTER | 1 | (P, PC) | Q205 | UN9116TX | TRANSISTOR | 1 | |
| CF201 | RLFEFCM3459A | CERAMIC FILTER | 1 | (EB, EG) | Q206 | UN9115TX | TRANSISTOR | 1 | |
| CF202 | RLFFECWN02AL | CERAMIC FILTER | 1 | | Q207 | UN9110TX | TRANSISTOR | 1 | |
| CF203 | RLFDFOC02AL | CERAMIC FILTER | 1 | | Q208, 09 | 2SB1462STX | TRANSISTOR | 2 | |
| | | | | | Q210 | 2SB1295-6-TB | TRANSISTOR | 1 | |
| CN1 | RJS2A1606T | CONNECTOR (6P) | 1 | | Q211 | 2SD2216RTX | TRANSISTOR | 1 | |
| | | | | | Q212 | 2SA1774STL | TRANSISTOR | 1 | |
| CT101 | RCVCF20C02X | TRIMMER | 1 | | Q213 | 2SD2216RTX | TRANSISTOR | 1 | |
| | | | | | Q214, 15 | UN9210TX | TRANSISTOR | 2 | |

| Ref. No. | Part No. | Part Name & Description | Pcs | Remarks |
|----------|--------------|-------------------------|-----|---------|
| Q301 | 2SD2216STX | TRANSISTOR | 1 | |
| Q302 | DTA143ZETL | TRANSISTOR | 1 | |
| Q304 | UNR921BJTX | TRANSISTOR | 1 | |
| Q305 | 2SB1295-6-TB | TRANSISTOR | 1 | |
| Q306 | 2SD2216RTX | TRANSISTOR | 1 | |
| Q307 | 2SB1295-6-TB | TRANSISTOR | 1 | |
| Q308 | UN9110TX | TRANSISTOR | 1 | |
| Q309 | DTC143ZETL | TRANSISTOR | 1 | |
| Q310 | UNR921BJTX | TRANSISTOR | 1 | |
| Q311 | 2SB1462RTX | TRANSISTOR | 1 | |
| Q413 | UN9210TX | TRANSISTOR | 1 | |
| Q501 | UN9110TX | TRANSISTOR | 1 | |
| Q502, 03 | UN9215TX | TRANSISTOR | 2 | |
| Q504 | UNR921BJTX | TRANSISTOR | 1 | |
| Q505 | 2SB1295-6-TB | TRANSISTOR | 1 | |
| Q506 | UN9110TX | TRANSISTOR | 1 | |
| R21, 22 | ERJ2GEJ470X | 1/4W 47 | 2 | |
| R23 | ERJ2GEJ681X | 1/4W 680 | 1 | |
| R25 | ERJ2GEJ472X | 1/4W 4.7K | 1 | |
| R50 | ERJ2GEJ224X | 1/4W 220K | 1 | |
| R51 | ERJ3GEYJ3R3V | 1/16W 3.3 | 1 | |
| R53 | ERJ2GEJ104X | 1/4W 100K | 1 | |
| R55, 56 | ERJ2GEJ224X | 1/4W 220K | 2 | |
| R57 | ERJ3GEYD154V | 1/16W 150K | 1 | |
| R58 | ERJ3GEYD204V | 1/16W 200K | 1 | |
| R59 | ERJ2GEJ473X | 1/4W 47K | 1 | |
| R60 | ERJ2GEJ224X | 1/4W 220K | 1 | |
| R61, 62 | ERJ2GEJ474X | 1/4W 470K | 2 | |
| R103, 04 | ERJ2GEJ474X | 1/4W 470K | 2 | |
| R109 | EXB28V474JX | 1/32W 470K×4 | 1 | |
| R112 | ERJ2GEJ220X | 1/4W 22 | 1 | |
| R114 | ERJ2GEJ182X | 1/4W 1.8K | 1 | |
| R115 | ERJ2GEJ391X | 1/4W 390 | 1 | |
| R116 | ERJ2GEJ473X | 1/4W 47K | 1 | |
| R117 | ERJ2GEJ152X | 1/4W 1.5K | 1 | |
| R118 | ERJ2GEJ223X | 1/4W 22K | 1 | |
| R119 | ERJ2GEJ151X | 1/4W 150 | 1 | |
| R123 | ERJ2GEJ152X | 1/4W 1.5K | 1 | |
| R124 | ERJ2GEJ473X | 1/4W 47K | 1 | |
| R151, 52 | ERJ2GEJ103X | 1/4W 10K | 2 | |
| R153 | ERJ2GEJ153X | 1/4W 15K | 1 | |
| R154 | ERJ2GEJ472X | 1/4W 4.7K | 1 | |
| R201 | ERJ2GEJ332X | 1/4W 3.3K | 1 | |
| R202 | ERJ2GEJ821X | 1/4W 820 | 1 | |
| R203 | ERJ2GEJ101X | 1/4W 100 | 1 | |
| R204 | ERJ2GEJ224X | 1/4W 220K | 1 | |
| R205 | ERJ2GEJ822X | 1/4W 8.2K | 1 | |
| R206 | ERJ2GEJ474X | 1/4W 470K | 1 | |
| R207 | ERJ2GEJ513X | 1/4W 51K | 1 | |
| R208 | ERJ2GEJ221X | 1/4W 220 | 1 | |
| R209 | ERJ2GEJ332X | 1/4W 3.3K | 1 | |
| R210 | ERJ2GEJ153X | 1/4W 15K | 1 | |
| R211 | ERJ2GEJ333X | 1/4W 33K | 1 | |
| R212 | ERJ2GEJ472X | 1/4W 4.7K | 1 | |
| R213 | ERJ2GEJ152X | 1/4W 1.5K | 1 | |
| R214 | ERJ2GEJ181X | 1/4W 180 | 1 | |
| R215 | ERJ2GEJ682X | 1/4W 6.8K | 1 | |
| R216, 17 | ERJ2GEJ512X | 1/4W 5.1K | 2 | |
| R218 | ERJ2GEJ102X | 1/4W 1K | 1 | |
| R219 | ERJ2GEJ153X | 1/4W 15K | 1 | |
| R220 | ERJ2GEJ332X | 1/4W 3.3K | 1 | |
| R221 | ERJ2GEJ103X | 1/4W 10K | 1 | |
| R222 | ERJ2GEJ221X | 1/4W 220 | 1 | |
| R223 | ERJ2GEJ152X | 1/4W 1.5K | 1 | |
| R224 | ERJ2GEJ104X | 1/4W 100K | 1 | |
| R225, 26 | ERJ2GEJ273X | 1/4W 27K | 2 | |
| R227 | ERJ2GEJ473X | 1/4W 47K | 1 | |
| R228 | ERJ2GEJ333X | 1/4W 33K | 1 | |
| R229 | ERJ2GEJ153X | 1/4W 15K | 1 | |
| R230 | ERJ3GEYD153V | 1/16W 15K | 1 | |
| R231 | ERJ3GEYD223V | 1/16W 22K | 1 | |
| R232 | ERJ2GEJ823X | 1/4W 82K | 1 | |
| R301, 02 | ERJ2GEJ474X | 1/4W 470K | 2 | |
| R303 | ERJ2GEJ471X | 1/4W 470 | 1 | |
| R304 | ERJ2GEJ474X | 1/4W 470K | 1 | |
| R306, 07 | ERJ3GEYJ106V | 1/16W 10M | 2 | |
| R308 | ERJ2GEJ224X | 1/4W 220K | 1 | |
| R309 | ERJ3GEYD104V | 1/16W 100K | 1 | |
| R310 | ERJ3GEYD224V | 1/16W 220K | 1 | |
| R313 | ERJ3GEYD103V | 1/16W 10K | 1 | |
| R314 | ERJ2GEJ473X | 1/4W 47K | 1 | |

■Supply of Rechargeable Battery as Replacement Parts

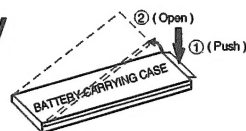
Please take note of the following points relating to Carrying Case to be used for protection of Rechargeable Battery from shorting.

Replacement Parts:

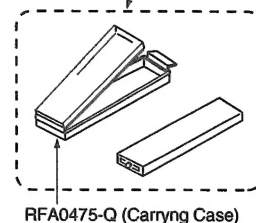
- Rechargeable Battery (RP-BP61PYS1 (P, PC), RP-BP62EYS-1 (EB, EG) to be supplied will be provided with Carrying Case (RFA0475-Q).
- No replacement parts will be supplied for Rechargeable Battery without Carrying Case.
- Replacement parts will be supplied for Carrying Case (RFA0475-Q) without Rechargeable Battery.
- To your customers, delivery Rechargeable Battery together with Carrying Case to prevent shorting accidents that may occur when Rechargeable Battery is carried about without Carrying Case.

■Caution in Use of Rechargeable Battery

- Take Rechargeable Battery out of Carrying Case and use it.
- Be sure to carry Rechargeable Battery in this Carrying Case.



RP-BP62EYS-1(EB, EG)
RP-BP61PYS1(P, PC)
(Rechargeable Battery with
Carrying Case)



■Packaging

